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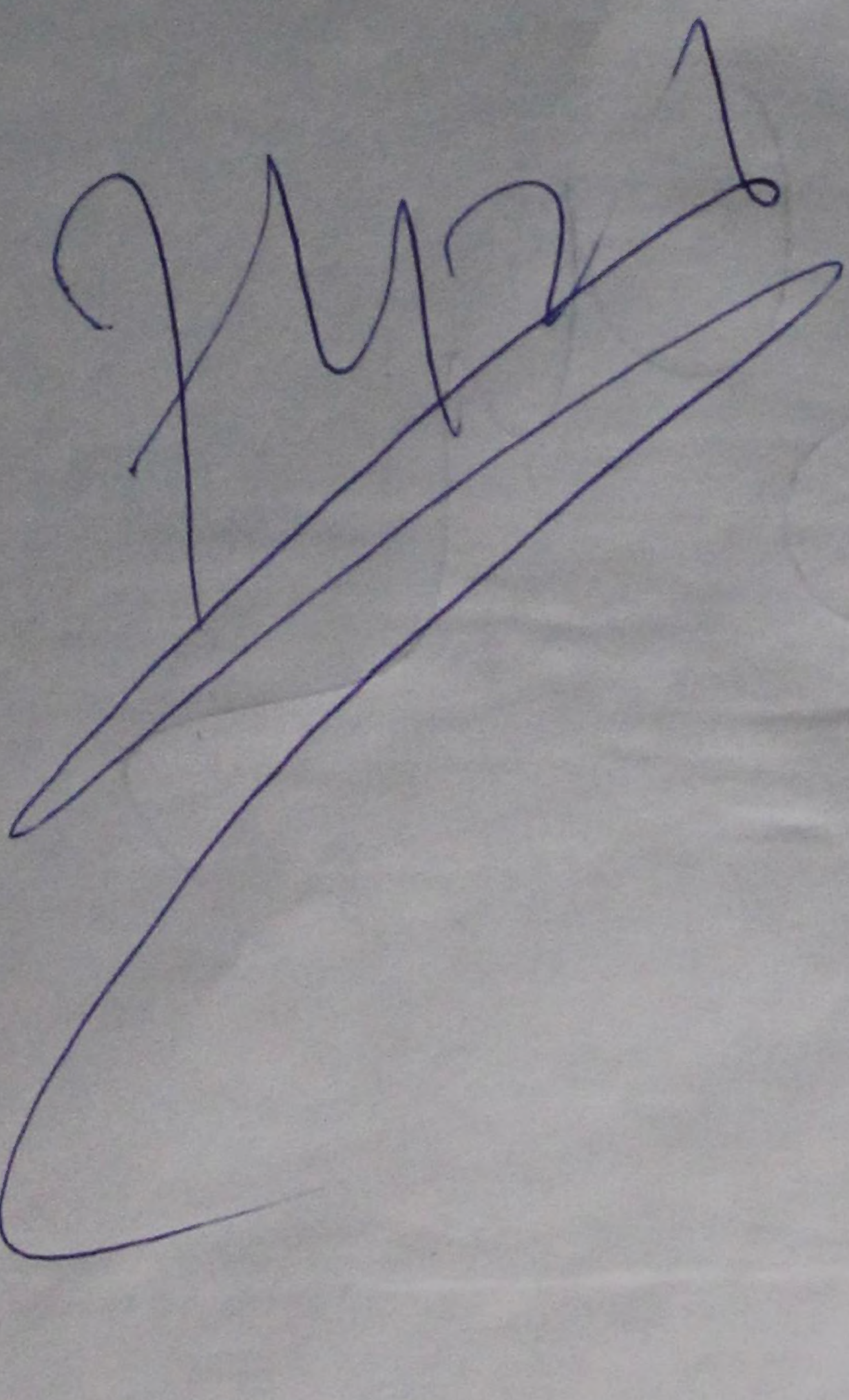

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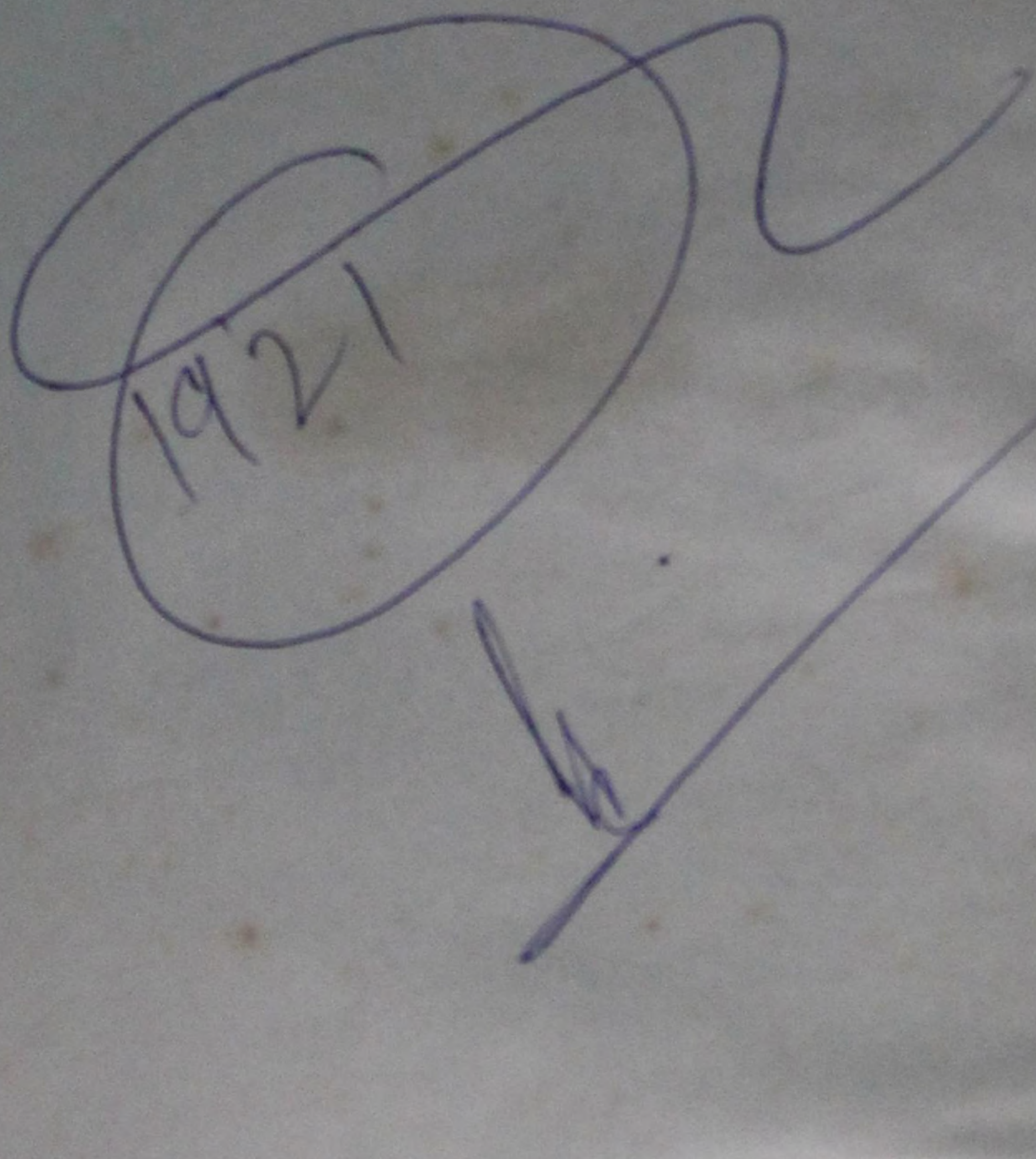
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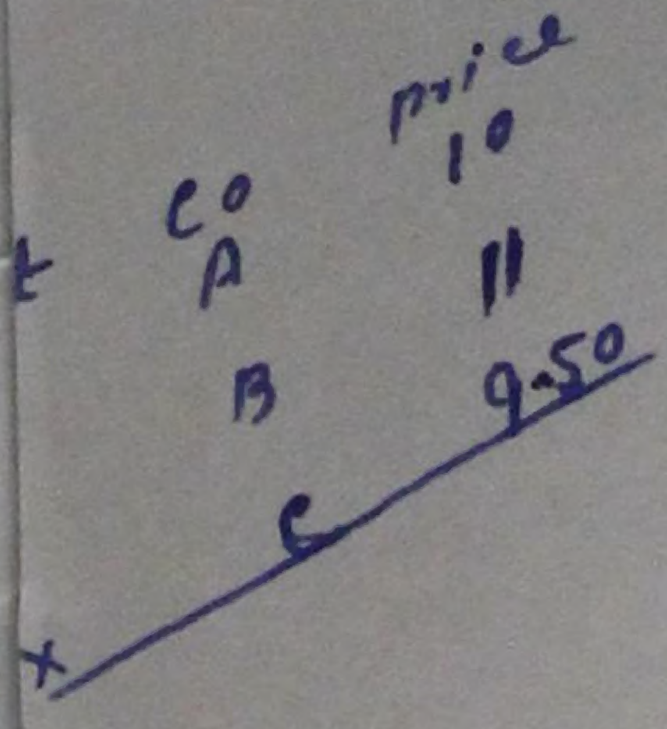

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READINGS IN MARKETING MANAGEMENT

EDITED BY

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Foreword

The rapid emergence of management education programs in the developing economies of Latin America, Asia and Africa has created a corresponding growth in the demand for suitable reading and teaching materials—materials that are more directly relevant to conditions and problems prevailing in these economies and more accessible within limited student budgets.

As part of a wider effort to meet these demands, the International Center for the Advancement of Management Education, Graduate School of Business, Stanford University, encourages and sponsors staff members and participants in its seminars to collect and write cases based on research in the developing economies; to select, assemble and translate particularly relevant materials from the existing literature and to write papers and monographs incorporating ideas usable in business administration courses in these countries.

This book is one result of this effort. Like its companion pieces, its aim is to provide a useful addition to the inventory of materials available to those engaged in a study of management problems and practices.

International Center for the Advancement
of Management Education,
Graduate School of Business,
Stanford University,
Stanford, California

EZRA SOLOMON
Director

Preface

Over the past decade or so marketing has received increasing attention from both marketing teachers and marketing practitioners. The development of world markets, vast technological changes, the increasing industrialization taking place in the emerging economies, the outpouring of new products, and the realization that marketing costs are a substantial part of the total costs of any product are but a few of the many reasons for the intense interest being generated in this subject.

Marketing is a difficult subject to master if only because it requires an understanding of a variety of disciplines including economics, sociology, cultural anthropology, psychology, management science, mathematics, and statistics. This implies, in turn, that it is a difficult subject on which to write because of the skills required. It seemed appropriate, therefore, to attempt to overcome this limitation by assembling in one book the best that could be said about the subject of marketing by literally going to those who possess unique skills in one of the basic disciplines mentioned earlier. This, then, is the rationale for this book of readings!

The readings contained in this book were selected because of their contribution to the concepts of marketing management as well as to the implementation of these concepts. Chosen from a variety of disciplines and containing. but a minimum of "Americana" they offer, in the aggregate, the best available regarding marketing management. Throughout the book emphasis is placed on the *action* component of marketing. The articles contained in this book are both broad and narrow in that some apply primarily to the operations of the marketing department while others apply to the operations of the total firm as affected by activities in the market place.

The search to locate the over fifty articles contained in this book required the screening of literally hundreds of articles from a wide variety of sources. The criteria were that, first, the material must be directly applicable to the business management sector of the Indian economy and, second, that it be the "best" available regardless of origin or date. In the latter case, the selection was hopefully confined to the classics of thought related to marketing management.

The basic theme of this volume is that marketing is not—indeed cannot be—a mere collection of a variety of discrete activities. Rather, the point of view is taken that marketing is a unifying agent for *all* management activities.

This view is reflected in the organization of the book which is as follows:

I. Nature and Scope of Marketing Management
II. Effect of the Market on the Activities of the Firm
III. Segmenting the Market
IV. Planning and Decision-making in Marketing
V. Major Marketing Strategies
VI. The Marketing Organization
VII. Evaluation of Marketing Efforts

Considerable attention is given to the basic marketing strategies by including articles which center on the product, pricing, channels of distribution and physical logistics, advertising, and personal selling.

We acknowledge with thanks the opportunity to reproduce material selected from the following sources :

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Advertising Research Foundation, Inc.
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The Paraffined Carton Research Council

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We are most grateful to the faculty and staff of the International Center
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e Center—as visiting professor of marketing and participating fellow at
e Center's seminar in marketing on leave from the University of Delhi.

HARPER W. BOYD, JR.
M. C. KAPOOR

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I/NATURE AND SCOPE OF MARKETING MANAGEMENT

1 / *Marketing Management and the Administrative Process*

RALPH WESTFALL AND HARPER W. BOYD, JR.

The administrative process provides a useful framework for the diagnosis and analysis of marketing problems as well as a way of conceptualizing the tasks faced by marketing managers.

The administrative process consists of setting objectives, planning the operations necessary to achieve the objectives, organizing to put the plan into action, putting the plan into action, and controlling the operations in such a way as to know whether or not the objectives are being achieved. The concept of this process provides a useful framework for analysis of the problems facing a marketing manager. It enables the administrator to perceive the total operation of the firm and the relationship of the marketing activities to this totality. It also furnishes him with an orderly sequence of steps by which to think through his job, and it provides a perspective from which he can make a more realistic diagnosis of the day-to-day problems that come across his desk, distinguishing between symptoms and basic problems.

The administrative process is simple to comprehend yet difficult to apply. It involves a way of administrative life and, as such, should permeate the everyday business life of all executives. It is essentially non-quantitative, although quantitative techniques are helpful in "solving" the problems that are involved in its implementation. The process provides a way of taking fragments of information and putting them into categories that in the long run, will provide the executive with data that will facilitate decision making.

SETTING OBJECTIVES

The broad objective of a firm is to make profits, but a company also has responsibilities to the stockholders, the community, and its employees. None of these, however, provides a specific rationale for the firm's existence. Some writers have suggested that management think of its basic objective in terms of the firm's specific products or services, but a more useful approach is to think of a firm's objective in terms of "the niche or part of the market that the company wishes to acquire by offering some product or service. In

SOURCE : From *Cases in Marketing Management* (Homewood, Ill. : Richard D. Irwin, Inc., 1961), pp. 1-6. Ralph Westfall: Professor of Marketing, Northwestern University. Harper W. Boyd, Jr.: Professor of Marketing, Northwestern University.

thinking about a company's objective, in other words, we can go beyond the product or service itself to the kind of demand involved—for example, the demand for finely tailored men's clothes or specific types of food products".[1]

This line of thinking has become known as "the marketing concept" and is well summarised as follows : "Management must think of itself not as producing products but as providing customer-creating value satisfactions. It must push this idea (and everything it means and requires) into every nook and cranny of the organization. It has to do this continuously and with the kind of flair that excites and stimulates the people in it. Otherwise, the company will be merely a series of pigeonholed parts, with no consolidating sense of purpose or direction. In short, the organization must learn to think of itself not as producing goods or services but as buying customers, as doing the things that will make people want to do business with it".[2]

Most firms must confine their basic objective to some particular part or segment of the market. Rarely, if ever, can a firm, regardless of its size, satisfy the needs of all segments comprising the market for a given product. This is particularly true if one thinks in terms of product use as contrasted with specific products or services. Those firms producing for the mass market typically find that they cannot actually produce successfully for all market segments, e.g. they cannot satisfy both the segment demanding low-priced products and the segment demanding highest quality regardless of price. Despite this need to concentrate on a specific market segment, it is essential that management not think too narrowly about the firm's niche, since to do so will prevent management from being perceptive to slow trends that may ultimately erode substantially the need for its product. The case of the railroads and their narrow objective of moving goods and people only over steel rails is a classic example.

Before deciding what niche to aim for, a firm must, of course, know the demands of the various market segments, how competing firms are attempting to satisfy these demands, the resources of the present and potential firms comprising the industry, and its own resources. A realistic accounting of a firm's own resources is difficult, since it includes an appraisal of human resources. Some firms make the mistake of using the resources of the other firms in the industry as a standard for measuring the worth of their own resources. While such a criterion is useful, it is ultimately the needs of the market niche that the firm seeks to fill that determine the value of its resources.

Once the firm has determined a market niche that is consistent with its resources, it is then, and only then, ready to meet the problems of planning,

[1] Edward T. P. Watson, "Diagnosis of Management Problems", *Harvard Business Review*, January-February, 1958, p. 70.

[2] Theodore Levitt, "Marketing Myopia", *Harvard Business Review*, July-August, 1960, p. 56.

organizing, and controlling its operations. The market niche becomes "the broad umbrella that governs the total business life".[3]

PLANNING

Management has the responsibility of developing a program or plan of action that is consistent with the needs of the market niche, the trends and conditions existing in the economic environment within which the firm operates, and the firm's resources. While a firm's total plan encompasses far more than merely the marketing aspects, the major strategies upon which the detailed plans are built are market oriented. It is not easy to categorize these strategies, but a useful (and generally accepted) classification includes four categories: the strategies of product and product line; channels of distribution; advertising, personal selling, and promotion; and pricing.

Each of these strategy categories is very broad; each can be divided and then subdivided into many parts. All are highly interdependent. The product strategy that a firm adopts is conditioned by and in turn influences the other strategies. Putting these various strategies together to obtain the optimum over-all "mix" is one of management's most difficult problems. At any one time, one activity may dominate the marketing "mix", causing other activities to be adjusted accordingly. At another time, this activity may be of minor importance. Research and development, for example, may be most important at one point, but later the development of competent channels of distribution may become the most essential need. The ability to adjust to changing conditions is necessary. "Strategy becomes embodied in company policy, and a policy can sometimes become a sacred cow, which succeeding managements hesitate to change either because of a feeling that it is difficult to argue with success or a belief that present trends are fads that will soon disappear".[4]

Once the various strategies have been determined, planning of a different type must be effected. Scheduling or programing must be carried out and provisions made for co-ordination. A marketing program is a continuous activity. It should specify *what* to do, *how* to do it, *when* to do it, and *who* is to do it. It is specific—establishing quantitative forecasts and quotas. It involves the construction of a budget, or a series of budgets, in which sales, margins, and expenses are specified in total and by operating units down to individual salesmen. The plan shows the role to be played by each activity within the marketing department and, where applicable, activities located in other areas of the firm. The construction of a plan will often bring into the open operational inconsistencies that have prevailed in the past; for example, the failure to co-ordinate sales and advertising or the goal of "signing up" certain large outlets without "upgrading" the sales force.

[3] Fred J. Borch, "The Marketing Philosophy as a Way of Business Life", American Management Association, Inc., Marketing Series No. 99, 1957, p. 4.

[4] Watson, *op. cit.*, p. 72.

A marketing plan helps co-ordinate the activities of the marketing department. It fixes responsibility and alerts executives as to what to do and when to do it. It does not insure against failure. Plans must be carried out by people who do not always perform as expected. This may be failure on the part of the operating individuals or failure on the part of the planners to forecast accurately. Conditions in the market also change, so the plan must be considered a flexible instrument, to be changed as changing conditions require. Properly used, there is little doubt that operation according to a marketing plan increases the probability of achieving the marketing objectives.

ORGANIZING

The previously discussed steps in the administrative process—setting the marketing objective and developing the marketing plan—predetermine, to a considerable extent, the organization system of the firm.

> The dominant values in industry have shifted from those of the manufacturing executive to those of the marketing executive. It is the manufacturing executive or engineer who is concerned with the system, who models his organization after the machine, who gets excited about input, output, and feedback, who strives to eliminate human sentiments and values from the work and market place, who strives to develop the one and only system, and who places a premium on standardization. It is the marketing manager who looks out into the external world and views the changing, shifting needs of the market, the relativity of business objectives, the need for flexibility, the importance of constant adjustment, etc. These shifts in organization patterns would appear to represent a shift in occupational dominance and a reintegration of industry in terms of marketing values.[5]

Since the marketing department usually serves as the firm's line of communication with the market, it is essential that the firm's over-all organization provide for a communications system which permits—indeed, encourages—the flow of relevant information from the market as well as to the market and helps the information flow through the marketing department to the various other departments and to top management. One of the most difficult organizational problems is how to co-ordinate the marketing, engineering, and production departments. While the departmental organizational systems can be structured so that they are "plugged into" one another, it is not always possible to overcome the inevitable human weakness that people tend to

[5] David G. Moore, "Marketing Orientation and Emerging Patterns of Management and Organization", in Eugene J. Kelley and William Lazer (eds.), *Managerial Marketing: Perspectives and Viewpoints* (Homewood, Ill.: Richard D. Irwin, Inc., 1957), p. 248.

hear and believe only those things that they *want* to hear and believe. Typically, the marketing department wants many product variations and frequent, quick product changes. Engineering and production tend to favor standardized products and infrequent changes. While this conflict is not without its advantages (a better balance may result from countervailing power), the firm's organization must be such that head-on clashes are detected and differences reconciled quickly.

The organizational system within the marketing department must recognize and establish the proper relationships between line and staff personnel, the scope of each individual's job, the authority system, and the system for controlling the organization over time. Such concepts as centralization versus decentralization; profit centers; and geographic-, customer-, or product-centered organizational breakdowns are important.

There are many dimensions of the organizational system, for example, the organization shown on the chart, the organizational system through which communications flow, the system for exercising authority, the system for control, and others. They are interrelated and changes in any one will inevitably affect the others. The organizational system is one of the most sensitive areas with which management has to contend. Failure by management to adjust the organization to changes in the market or within the firm will quickly lead to organizational problems.

PUTTING THE PLAN INTO ACTION

No matter how complete the definition of objectives, the planning of marketing strategies, and the organizing of activities, nothing happens if these are merely left on paper. The organization must put the plan into action.

The field sales force is one of the main centers of such action. Salesmen must be recruited, trained, supervised, and paid. Plans for these activities are developed in the planning step of the administrative process. Such plans will take into account sales-force needs in view of the objectives. If more salesmen are needed to accomplish the sales objective, the plan will call for this increase. It is in the action step, however, that recruiting activities are begun, actual individuals selected, training programs put on, salesmen sent into the field—inspired, encouraged, or pushed as the case may require.

Advertising programs must also be activated. The advertising personnel, often in conjunction with an advertising agency, develop the actual advertisements to be used, the media in which to place them, and the other promotional activities, such as point-of-purchase advertising materials and special promotions.

The marketing research department determines the projects on which it can work most profitably and then carries out the actual data collection and analysis. Physical distribution of the product must be accomplished.

Stocks are established and maintained at the necessary points, and orders are processed so that shipments arrive on time and intact.

CONTROLLING

The control function consists of following up to determine that the actual operation is proceeding according to plan. No executive can anticipate the future with certainty, and thus there is the probability that events will occur that will necessitate changes in the plan, the organization, or even in the objectives. Management must keep informed on both long-range market trends and short-run changes in the strategies employed by competitors. In another sense, control deals with mistakes; it attempts to identify them, rectify them, and prevent them from recurring.

Standards are an essential part of the control operation, since performance cannot be appraised unless it is measured against some criteria. It is not always possible to measure the performance of parts of the marketing operation, for example, the advertising function. Wherever possible, however, standards must be established; quotas and budgets are common types. They may be broken down by individual salesmen, territories, and products.

Reports are an essential part of the control system. Common reports are those dealing with actual sales versus quotas, brand share within individual markets, consumer brand preferences, attitudes of channels toward the company and its personnel, and cost ratios such as sales expenses to sales. In many companies the marketing research department spends a large part of its time and budget obtaining control information.

Another type of control that is essential is accomplished by personal supervision. Reports will rarely indicate what people are thinking or what their attitudes are. There is no effective substitute for the chief marketing executive's finding out how members of his department think or feel about a given situation through personal contact. Probably the most effective control over people is that which involves anticipating how they will react to a given situation. Once this is known with reasonable certainty, then management can adjust its decisions to utilize the typical reactions to best advantage.

Control leads to reappraisal. If it did not, control would apply solely to the present state of affairs and would not lead to any changes. Thus conceived, control would be a static process. Yet the market-oriented firm is flexible and dynamic, responding in a positive way to the changes in the market place. Reappraisal must be a continuous process whereby management assesses constantly the commitments of the firm's resources to a given set of strategies designed to exploit a given and definable market niche. The administrative process thus becomes an evolving circle in which objectives are changed, and this, in turn, produces a need for a change in the firm's marketing strategies, which in turn presents a need for a change in the organizational system, and so on.

2 / *Business Management as a Total System of Action and the Role of Marketing*

THOMAS A. STAUDT

In this article the author views business as a goal-directed system in which the objectives determine the way in which the resources of the firm are combined in the form of operating systems. The underlying strategies and tactics of the firm must be market oriented since the market holds veto power over the efficient operation of the entire system.

INTRODUCTION

Business management in the present American economy is a highly complex process which cannot be characterized easily in simple terms. Stated as succinctly as possible, however, management involves the planning, organizing, and controlling of a combination of "inputs" to achieve a predetermined series of "outputs". This means that the administrative action of the firm is a goal-directed effort in which the objectives of the firm determine the way in which men, materials, machines, and money are combined in the form of operating systems. From a managerial point of view *the firm is engaged in integrated production* (creation of utility) *to serve most profitably an area of market opportunity.* Markets are the lifeblood of the business: they are its principal source of revenue. It is in meeting the needs and preferences of buyers making up the market that the firm finds the economic justification for its existence. The realization of this viewpoint sharpens the focus substantially of the whole business process. It properly presents marketing as the cornerstone in a managerial philosophy with which to guide the actions of the firm. We have often heard firms characterized as being machine-tool manufacturers, food processors, dress makers, steel fabricators, or heating and air conditioning assemblers. These characterizations are descriptively helpful; but they do not adequately convey the managerial orientation to the firm, for each emphasizes the principal employee activities. Actually, these activities are only preparatory to achieving the main goal of the firm which is profitably serving *markets* in which these products are *consumed.*

SOURCE : From William Lazer and Eugene J. Kelley (eds.), *Managerial Marketing* (Homewood, Ill. : Richard D. Irwin, Inc., 1962), pp. 198-204. Thomas A Staudt: Professor of Marketing, Michigan State University.

PROFITS REFLECT THE EFFECTIVE FUNCTIONING OF THE FIRM AS A WHOLE

If the dominant goal of the enterprise is to serve profitably an area of market opportunity, then those assets and distinctive qualities of the firm which make for lasting competitive superiority must be fully capitalized. In carving a niche for itself in the market, each firm must employ its resources in such a way as to develop a total "personality" for competitive purposes which gives it the greatest economic power and which rivals will find hardest to duplicate. In this mission, all resources of the firm are pertinent, including its research and development talents, engineering skills, production efficiency and know-how, and the effectiveness of its sales organization.

When one thinks of all the factors that can make for *competitive superiority,* it becomes obvious that the operations of the firm as a whole must be considered as primary, rather than the functioning of any one of the parts. Moreover, in striving for profit maximization, management's problem is one of effective integration and combination of all the parts of the enterprise. In this sense, then, it cannot be said that marketing is more important than any other functional part of the firm, anymore than it can be said that the carburetor is a more important part of a gasoline engine than the ignition system. The efficient functioning of the engine depends upon the optimum operation of each of the parts in a mutually dependent way. Translating this notion into management terms, we can think of the firm as consisting of a profit pipeline into one end of which flows a series of inputs ultimately being transformed into a series of outputs at the other end. In between, acting as successive valves or gates in the profit pipeline, are the principal functional phases of operations which account either directly or indirectly for this transformation. For profits, which are the energizing

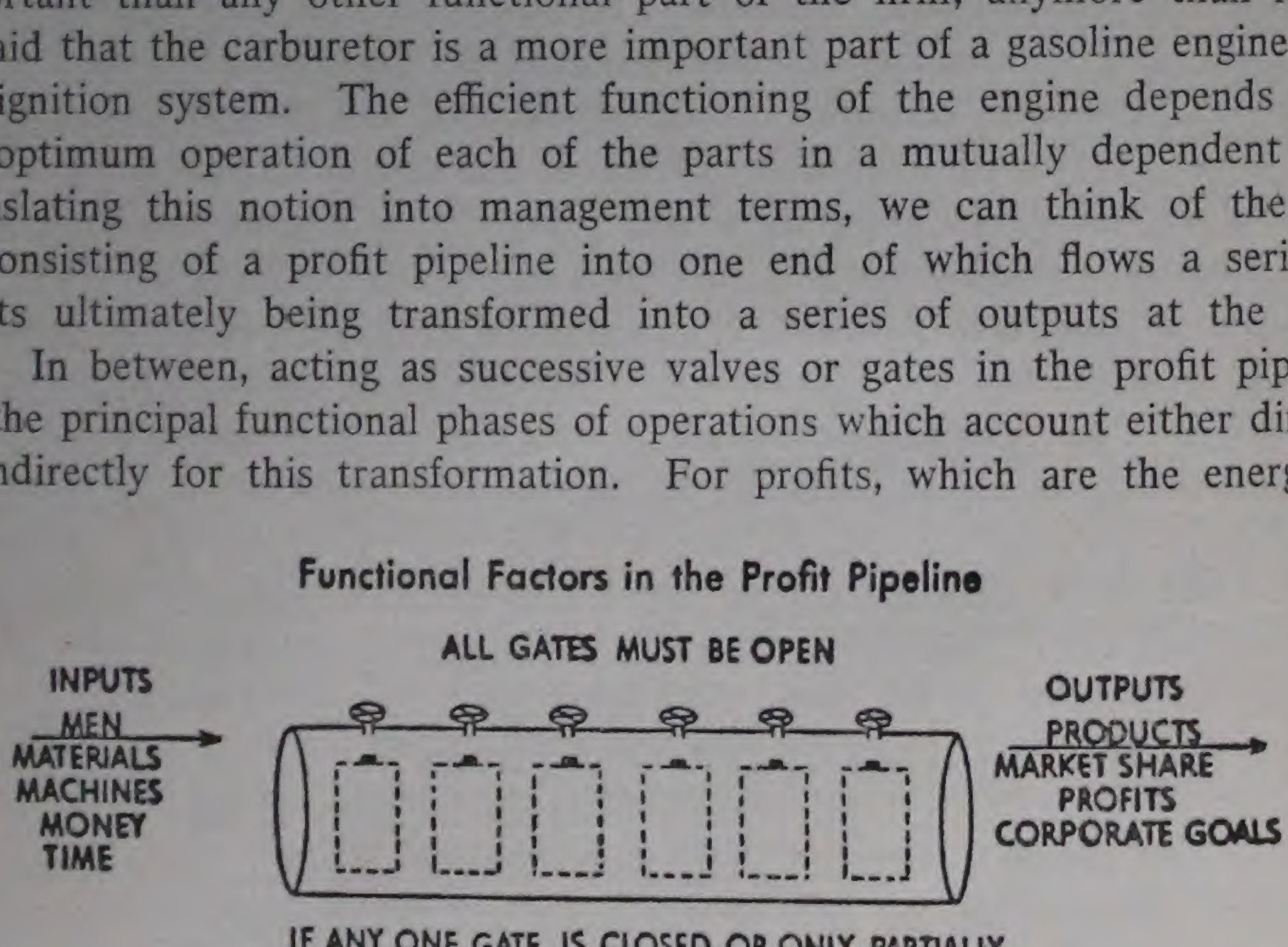

FIG. 1

force within the business, to flow in an optimum way, all gates must be open. Close any one gate and the profit pipeline becomes clogged. Figure 1 is a pictorial illustration of the pipeline.

The operations of most industrial enterprises center around the six principal functional relationships shown in the illustration. Each of these is strategic, and when performance in any one is inferior, the firm as a whole may be incapable of achieving its over-all objectives. A few selected examples will serve to illustrate this point.

The crucial importance for many firms of the research and development area is evidenced by the fact that many companies estimate that a major proportion of their sales in the next ten years will come from products not now in production. American industry more and more is dependent upon technological development for its well-being. Product displacement resulting from scientific research and engineering is more rapid. The profitable length of life of many products is consequently much shorter than once was the case. For instance, in the electronics industry, three years is believed to be a long period of time for any firm to expect to have a preferred technological position with a product before competitors can offer new products with basic improvements. This means that firms are required to spend an increasing number of dollars for research and development, if only for defensive purposes. Successful opportunities to lag continuously in the pertinent technology of the industry are more limited now than ever.

Purchasing can play a very important role in the profit affairs of the firm, particularly where materials account for a large percentage of each sales dollar. For example, in paper making, materials account for about 60 per cent of the total product cost. In 1953, one paper mill had sales in the neighborhood of $15 million and profits from operations before taxes of $600,000. In that year, however, it was necessary to write down materials in valuation by over half a million dollars, leaving the firm barely above the break-even point for the business as a whole.

The total significance of the personnel management and industrial relations area is becoming better recognized. Human resources are perhaps the most significant resource of any firm—particularly over the longer period. The success of the firm, to a great extent, depends upon the quality of its people and their effective utilization. Indicative of this is the current widespread management interest in executive development programs, to provide able administrators to keep pace with industrial growth and decentralization, and provide a continuous supply of top management personnel. In the industrial relations area, consider the cost to Westinghouse of its 1955 strike. Millions of dollars in profits were lost directly through the shut-down and more millions indirectly before it could recapture its over-all position in the market. To estimate accurately the total real cost of such a strike is almost impossible.

The importance to the firm of sound financial management is obvious. Capital budgeting and financial controls are a normal part of day-to-day operations in any soundly managed enterprise. Moreover, with the current rate of industrial expansion, long-range financial planning is increasingly

essential if growth opportunities are not to be lost. It has been said that the end result sought for any business is financial, and all other activities are merely a means to the end. While such a position overstates the case and is oversimplified, none would deny the key influence to business welfare of good financial planning and control.

Production for many enterprises accounts for the bulk of personnel and the major expenditure of funds. In some industries, such as the manufacturing of fractional horsepower electric motors, the ability to match competitors' costs in automated line production is a prerequisite to any serious competition at all. That production is closely interdependent with marketing should also be noted at this point. Actually, one finds its meaning in the other. The major dichotomy between the two so often found in industry is neither sound nor practical, but this viewpoint will be expanded later on.

The above examples and comments are intended to show that the operations of the firm as a whole must be considered as primary rather than any of its operational parts. The chief executive officer of the company cannot become preoccupied with the overriding importance of any one functional area as compared with another. While some companies are primarily oriented in one particular way—such as soap companies being primarily merchandising organizations and scientific instrument companies being oriented to technical research and engineering—the point still holds: the operations of the firm should be looked at as a total system of action. Consequently, the gasoline engine analogy holds and *in this sense* marketing is no more important than any other principal functional phase of company operations. But there is one overriding and all-powerful consideration with respect to the forces of the market place which provides the focus for management strategy.

MARKET VETO POWER AND MANAGEMENT STRATEGY

While all individual actions taken in the functional areas can be considered as within management discretion, *it is the market which sanctions all the preceding steps prior to the making of a sale.* This is to say that *the market holds at least veto power over the entire system.* What is done in research and development, production design, production scheduling, quality control, inventory control and the like must ultimately meet the test of the market place—do buyers give their approval through allocating their own resources for the purchase of the product in sufficient quantities and at adequate prices? Since this veto power exists and since the firm is organized for the purpose of profitably serving market opportunity it follows that the *strategy and tactics of the firm should be market oriented.*

It is true that value added by manufacturing and distribution flows toward the market place rather than from it. However, just because succeeding steps in a system designed to move products from raw materials into

finished form in the hands of ultimate buyers flows in this direction is no justification for planning and strategy to flow in the same direction. As noted earlier, the whole system of action should constitute goal-directed effort. The synthesis of this point of view is conceptually diagrammed in Figure 2.

Integrated Production—Distribution System for Creating Utilities to Serve Market Opportunity

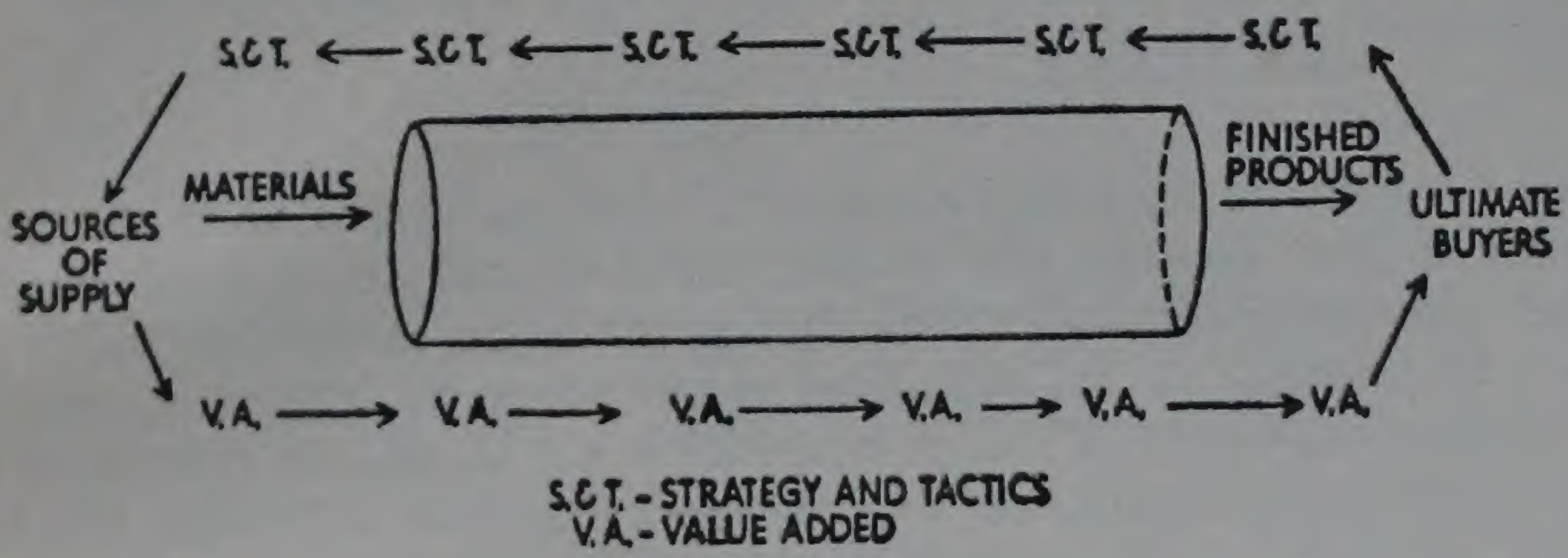

FIG. 2

The flow diagram, Figure 2, shows raw materials (or in whatever state purchased by the firm) entering the enterprise, and through design, equipment, human effort, and organizational systems and procedures being transformed into products destined for ultimate use. The managerially strategic and tactical action underlying the system as a whole is shown to be market oriented, or based on market requirements and specifications. Conviction in this fundamental notion is basic to any soundly managed, mature enterprise in a competitive free market economy. Value added to the product is of course shown to increase with each succeeding phase of operations within the system.

The philosophical objective of this whole system of action is maximum impact at the point of ultimate sale to precipitate purchase action within the boundary of optimum cost and revenue relationships. The qualification is important. Maximizing impact alone is not the objective. Reaching profit maximization is a prime target. This is achieved when impact is greatest, consistent with the total costs of developing that impact, and the revenues that would be forthcoming as a result of the purchase action that flows from it. *Stated differently this means matching total effort with market opportunity.* The effort in terms of manpower and dollars should be only as much as the market justifies. Also, this effort must not only be of the right quantity, but of the right quality and character for greatest market influence. Operationally, this precise point is extremely difficult to determine, much less reach; but it is the model of what is wanted. To approach this mode, an optimum combination of all cost centers wherever they exist is necessary (be they manufacturing or distributive), and the combina-

tion should be focused on market requirements. It is basically less time consuming, and more profitable, for a management to adjust its offering to the market environment, rather than to try to change the market environment to be responsive to what management prefers to supply. The old adage "You can have any color you want so long as it is black" may represent a happy state of affairs for a production executive, but it is out of date as a sound business philosophy as the Model T. Ford to which it was applied.

WHAT IS MARKETING?

The definition of marketing has been avoided deliberately up to this point because of the necessity for placing the role and function of marketing in the perspective of a total system of action carried on within the firm. The Committee on Definitions of the American Marketing Association defines marketing as "those activities which direct the flow of goods and services from production to consumption". This definition, although widely accepted, places emphasis on the economic role of marketing and does not clearly portray the scope of executive responsibilities for marketing. From a managerial viewpoint, two specific notes of caution are urged in using the definition. First, those charged with marketing responsibilities within the firm dare not think of their job as starting with goods on the shipping platform. Secondly, and at the other end of the spectrum of responsibilities, executives cannot consider their job as finished when the cash register rings at the retail level or point of ultimate sale. Effective and creative marketing encompasses a broader area of activities at either end of the scale.

On the basis of the above discussion, the following conclusions may be drawn:

1. Any business firm is engaged in integrated production (creation of utility) to serve most profitably market opportunity.
2. The functioning of the firm within the concept of a total system of action must be considered as primary, rather than the specific functioning of any one of the parts.
3. Marketing has priority of emphasis within the firm only by virtue of the fact that the market holds veto power over all the other activities carried on within the system.
4. The underlying strategy and tactics of the firm as a whole should be market oriented. Activities carried on within the system as a whole should constitute "goal-directed effort".
5. The objective for marketing, and indirectly for the firm as a whole, is thus one of achieving maximum impact at the point of ultimate sale to precipitate purchase action, within the boundary condition of an

optimum cost and revenue relationship—which means matching total effort with market opportunity.

6. A tremendous premium is placed on accurately defining market requirements and understanding purchase behavior.
7. Cost centers over the system as a whole should be combined in an optimum way within the focus of market targets.
8. In its total mission, and particularly for purposes of reaching its longer term objectives, management should capitalize those qualities and resources within the firm, which give it a total personality that in some way or other makes for competitive superiority and lasting distinctiveness.

HAROON HAFIZ
Saidu leader
Representative
University of Washington

3 / *What is the Marketing Management Concept ?*

J. B. McKITTERICK

The marketing concept as a new yet old management philosophy is currently receiving widespread attention from business executives. Why it has evolved to its present state of importance and the problems inherent in its implementation are the subjects of this article.

Anyone who gets a new idea bearing on business philosophy and who then takes the trouble to scan corresponding utterances of preceding generations will return to this thought with increased awareness of its apparent lack of originality. In an attempt to locate the historic significance of this marketing concept that we are going to discuss today, I started reading the 1930 and 1940 issues of the *Journal of Marketing* and the *Harvard Business Review*. To my surprise, I found that many of the viewpoints expressed and the stances advocated on business philosophy bear striking resemblance to current writings. Indeed, what really seems to have changed are the phenomena—the goings on—that the authors cite to validate the importance and rationale of their message. So we have here a not unfamiliar problem in the social sciences; namely that words change their meaning much more slowly than the things to which they refer. This is particularly true of concepts such as profit, overhead, productivity and marketing orientation—which deal not so much with things that happen as with ways of thinking about them.

In order to map changing meanings, it frequently is helpful to superimpose on a history of thought some crude scheme of classification which takes its definitions from the present. If we do this in the case of the marketing concept, we will notice that over the last thirty years the pre-occupation of businessmen with the customer increasingly has been formulated in terms of an end rather than in terms of a means. Correspondingly, the conception of profit as the end objective in business seems to have declined, with a tendency to view it more as a basic condition that must be satisfied. To be sure, thirty years ago businessmen admonished each other to keep the customer's interests in mind, but they usually connected this focus merely with their own need to adjust prices and volume of production to what the market would accept. Indeed, if we read between the lines, we find that

SOURCE : From Frank M. Bass (ed.). *The Frontiers of Marketing Thought and Science* (Chicago, American Marketing Association, 1957), pp. 71-82. J. B. McKitterick : Manager, Marketing Services Research Service, General Electric Company.

the customer used to be the chap that you sent the bill to—frequently a distributor, agent or dealer, but very rarely the actual end user. And sales tactics were conceived in terms of exploiting some scheme that would permit dealing with these trade institutions on a semi-exclusive basis. There was almost no mention of the idea that the manufacturer should focus his attention on the end user, and base his competitive footing on some superiority of value that matched with the needs of a particular group of these users. And it was obvious that few manufacturers felt that they had ability to look at the trade structure as a group of institutions for hire, to be selected and employed to perform specific functions that this end user needed. On the contrary, the trade structure was regarded as an impenetrable barrier—it *was* the market, and this fellow we have been calling the end user was the exclusive problem of the dealer, and no concern of the manufacturer.

Occasionally someone like Oswald Knauth, who has always been a bit ahead of his time, would remind the manufacturer that packaging and product styling had better be customer oriented. But by comparison to these occasional warnings to the man at the helm to keep his eye on what the customer was doing, there were urgent exhortations to the man in the engine room to get more output with less input. Indeed, the problem of winning out over competition seemed to be conceived essentially in terms of subtracting from the costs of production, and delivering an equivalent product at a lower price. So it was quite fitting that in the 1930's manufacturers studied the economics of scale, economists explored marginal concepts for setting the volume of production, and the government tried to prevent the large and efficient firm from sinking its smaller adversaries with the torpedo of lower price. In a short body of remarks it is out of scale to put a generalization such as this to adequate test, yet I cannot entirely resist some elaboration, because the social implications of what we call the marketing concept in the end are going to be of much greater importance than its bearing on management theory.

If we examine the 1920—1940 period, we find that it witnessed great gains in productivity, but not all of these gains were distributed to the labor force. The installed horsepower per production worker almost doubled, and the output per worker more than doubled. However, the average hourly wage in these twenty years increased only from 50 ¢ to 66 ¢ —not quite a third, and the number of production workers stayed almost constant at around $8\frac{1}{2}$ million members in a population that actually grew by over 20%. So, with rising productivity only to a limited degree passed on to the static body of production workers in the form of wage increases, consumer prices fell steadily until in 1940 they were only 70% of the 1920 level, and unemployment in a growing population was a serious and long continuing problem. During this same period, the design and manner of use of most products changed only slowly, and the gross national product increased a scant 14%.

To sum it up, the business ideology of producing the same product for less cost scarcely turned out to be an adequate driving force for economic growth. While a great deal of criticism was directed at the imperfections of markets organized around administered prices, subsequent events suggest that the real trouble was that most consumers had inadequate income and inadequate reason to buy. In short, productivity gains unevenly accompanied by innovation of new products and broad distribution of purchasing power resulted in a condition of chronic under-consumption.

Starting around 1940, the threat of war and the sponsorship of government combined to introduce a basic transformation in the business process which has had far reaching consequences. In a nutshell, business discovered research. On the eve of this revolution the total research outlay of businessmen stood at perhaps 100 million dollars. Today, these outlays are somewhere around four billions, and for the first time over 50% of all the research done in this country is being paid for by industry out of its own pocket. If we throw in the defense effort which the government pays for, the total research outlay rises to about $7\frac{1}{2}$ billions. However, our interest here is not so much in the growth of this new industry or the sheer size of its burden, which seems likely to surpass the total cost of all advertising; rather we are concerned to learn what research did to the growth of the economy and to the problems of designing and managing an enterprise.

Where the pre-1940 period was preoccupied with trying to make the same product cheaper, the postwar period saw a new dimension added to competition, in which the focus was to try and make the old product better, or even more bold, to try and launch a new product. And as the research-equipped manufacturer looked around for applications for his new-found creative power, he frequently discovered them in markets that he heretofore had not entered. The petroleum refinery began to turn out chemicals; the rubber plant, plastics; new alloys challenged older metals; electronics cast its shadows over hydraulics; and soon, everyone's research and competitive endeavor was attacking someone else's status quo. Established concepts of industry alignment began to obliterate, schemes narrowly conceived to defend market position in terms of price advantage proved inadequate; and managements began to contend with problems of uncertainty that had multiple dimensions. A labor plentiful economy overnight became a labor short economy, and even though the number of employee and production workers has grown 50% since 1940, and their productivity probably another 50%, still the demand for their services has grown even faster, and wages have gone up some 70% in constant dollars. So here we had a reversal of the conditions of the preceding 20 years; worker income rose more rapidly than productivity, competition was focused on using research to obsolete old ways of doing things, a flood of new products poured forth to meet the rising discretionary spending

power, and we became so impressed with the results of focusing on what would be better for the customer rather than merely cheaper that we invented a now familiar phrase—"the marketing concept"—to describe this triumph of innovation over productive capacity.

If we look back on these basic changes in the economy, we find clues to many of the problems which have concerned management science over the last ten years. I refer especially to the constant search for means of planning and control that can contend with these rapidly changing marketing conditions. For example, many businessmen have complained that the problem of predicting the customer's behavior has been greatly complicated both by his rapidly rising discretionary income and by his growing control over the use of leisure time. Mink coats and motor cars, buying things and buying experiences all have begun to interact, and the passing fad and the more slowly changing style of life of which it is a part have become very difficult to diagnose and distinguish. And as we already have noted, the industrial customer with his multiple raw material and process alternatives, and his possibilities of sub-contracting entire operations, swimming all the while in his own competitive sea of changing functions and market alignments, presents an equally fickle target for prediction.

At the same time both the need for and difficulty of business planning have been heightened by technological trends in the production and distribution process. The long term commitments required by automated plants, guaranteed wages, basic research, and multi-million dollar national promotions imply not only irreversible decisions, but also greater lead time, because the assumptions in planning have to hold good over a longer and longer period as the separation between decision and implementation grows apace. The annual budget in many companies has been supplemented with the five year and even the twenty year plan. The very considerable risks entailed in these large resource commitments, combined with the increasing hazards posed by the caprice of the customer and the research efforts of an undefined arena of prospective competitors, have resulted in a powerful urge for diversification. Few businesses today seem to be able to undertake the risk of staying in a single market with a single product. Indeed, observing the pell-mell flight to add new products and markets, one might say that the most characteristic response of modern corporations to uncertainty is to refuse to choose. As new product applications emerge, as new categories of customers come into the market, as new technologies compete to answer the old need, the corporation is inclined to embrace each in turn, forfeiting no opportunity, straddling all risks.

In due course, the organization structure begins to grow like a Christmas tree as the work of decision making is subdivided to take advantage of the specialized information and skills required. The sales executive is joined by the service manager, the product development manager, the

advertising manager, the distribution planning manager, the market research director, and the whole team is duplicated anew as further lines are added. Many decisions become difficult to deal with in such a structure because they straddle the responsibilities of individuals. And when it comes to prepare purposive plans, the business is troubled by its inability to bring its own identity into view—to see entirely its unique resources, skills and commitments, and the whole market environment of which they are a part.

Finally, in analyzing this planning problem and its bearing on the marketing concept, something probably should be said about the decline of the owner-manager. The great size of modern enterprise, the progressive tax structures, and the new-found affluence of even the most lowly worker all have combined to lessen the inclination and ability of individuals to undertake an entrepreneurial role in many markets. Fortunately, the very economic growth which rules out individual enterprise in one area opens up an opportunity for it somewhere else—as in the service industries. But it is my impression that the passing of the entrepreneur, where it has occurred, has removed an important element in the planning process, because he supplied the reason for planning in the sense that he specified the objectives to be attained. Indeed, this entrepreneur made planning easy—if at the same time fickle—by telling people what he wanted to accomplish, and the whole matter was scarcely less personal or more complicated than his choice of a necktie for the day. In the modern corporation we have replaced the owner-manager with a hired management accountable in concept to a diffuse and rapidly changing body of shareholders, but actually in performance quite sensitive to the appraisal of multiple audiences among customers, suppliers, labor, financial institutions, government and the public at large. By degrees, therefore, the decline of perfect competition and the decline of the entrepreneur with his simple conception of objectives are not unrelated events. Today's complex markets with many dimensions of competition have been accompanied by a corresponding multiplication of the values to be reconciled in the policies of modern enterprises.

So to summarize, business management has very difficult planning decisions to make, requiring that it foresee and analyze many alternate developments relating to its customers, competitors, and its own resources, and management must get these decisions made by people who are organized in an enormously complex structure, in which they are aware of the interrelationships of their part and the business, but unable to adequately see the whole business and its environment, and the ends to be served by all these forecasts and decisions are becoming increasingly diffuse and uncertain. It is in this sort of setting that the marketing concept was born, and it is my belief, after reflecting both on the background of the movement and the many statements of the case which businessmen have set forth, that what this really represents is a search for a management philosophy—a primacy of decision values—that can restore order and manageability out of what threatens to seem like chaos.

Indeed, at the risk of introducing controversy, I would speculate that looking back on this development twenty years hence, the marketing concept belatedly will be recognized as an appropriate voicing of the basic purpose of corporate institutions grown too large to be adequately guided by the profit interests of a single compact group of owners. Certainly, anyone who carefully subtracts out of the total expenses of a modern business all of the sums expended on preparation for the future—ranging from research and advertising to new plant and training of personnel—is bound to discover that profit is a feeble measure of the current day's battle with competition, and is certainly meaningless if not considered with reference to accompanying changes in market position. With many companies today operating in conditions of oligopoly, it is small wonder the enlargement of the market and competitive share held in that market have become matters of management concern at least equal if not prerequisite to profit.

Now I want to turn from the general economic conditions and management problems which accompanied the emergency of the marketing concept to a discussion of its implications for business practices. Necessarily, this will be a highly personal statement because it is next to impossible to synthesize into a single theme what others have already set forth on this subject. It does seem to me, however, that the real distinction of the marketing concept which leads to the conclusion "this company has it" or "this one doesn't", is not so much a matter of organization structure or day-to-day tactics as it is a matter of what the management is trying to accomplish.

A moment ago I referred to the shifting focus of objectives that has characterized the evolution of modern business enterprise—first, from a focus on profit for the owner to a striving for market position and success against competition, and most recently to a focus on growth in which there is a continuing planned effort to enlarge the size of the market. It seems to me that the crux of the marketing concept is expressed in the latter not by depriving its historic competitors of the market position which they already have captured, but by the application of research and insight to the task of creating new markets—indeed, new businesses—then we know that we are dealing with a management that has fully embraced the marketing concept. To be sure, as already has been brought out rather fully, any such endeavor is not without its economic repercussions in other markets and industries, but the very extent of these effects, reaching as they do to far and foreign places, confirms that something more than a minor improvement in the lot of the customer must have occurred. So to say it precisely, a company committed to the marketing concept focuses its major innovative effort on enlarging the size of the market in which it participates by introducing new generic products and services, by promoting new applications for existing products, and by seeking out new classes of customers who heretofore have not used the existing products.

In all cases the word "new" means more than just new to the company in

question. It means "new", period. This is a somewhat more rigorous definition than to merely say that the business must constantly think of the customers' best interests or put supremacy in marketing functions foremost. And I might add that the rigor is deliberate, because only thinking of the customer and mere technical proficiency in marketing both turn out to be inferior hands when played against the company that couples its thoughts with action and actually comes to market with a successful innovation. To be sure, the business that seeks to apply its research and mass production and national promotion prowess to such ambitious notions as doing really new things is going to have to be knowledgeably benign with respect to the customer, and it certainly will reduce its risks to the degree that it is experienced and skillful in its marketing organization. But if the product and the service and the way they are sold are fundamentally in the customer's best interests, a great deal of amateurism in marketing tactics can be tolerated without serious consequences. Turning the issue around, if business enterprises are to compete successfully in the quicksilver of modern markets, something more than sophistication in means of doing marketing work is going to be required. Indeed, to plan at all, and think adequately of what competition might do and its possible effects before committing multi-million dollar resources, requires knowledge of the customer which penetrates to the level of theory. *So the principal task of the marketing function in a management concept is not so much to be skillful in making the customer do what suits the interests of the business as to be skillful in conceiving and then making the business do what suits the interests of the customer.* As Frank Knight observed some years ago, in conditions of real uncertainty, the outcome of a venture will be controlled much more by the entrepreneurial decision on what major course of action to undertake than by expert practice in implementation.[1] Thus, the central meaning of the marketing concept to the decision structure of a business is that the major purpose of the venture is taken from the need to solve some problem in the outer environment—some betterment for the customer—and all subsidiary decisions dealing with the acquisition and allocation of resources within the business are bent to that objective. In this light, certain tests can be applied to our daily business practices which sharpen the distinction between the marketing concept and the mere awareness in management that superiority in the marketing function is beginning to be of greater strategic importance than superiority in the production function.

For example, we might ask, is the service of customers or defense against competition the main focus of the creative search for better courses of action? Is the business in the habit of undertaking tactics which pay their way in added sales volume, but which in prompt imitation by competition fail to add to profit? If so, is the overall marketing effort really adding consumable

[1] Frank H. Knight, *Risk, Uncertainty, and Profit* (Boston: Houghton Mifflin Company, 1921).

value for the customer, or only adding cost—as for instance, advertising expenditures which seek to make like products seem unlike, and product redesign which attempts to produce obsolescence without adding to the functions performed by the product? Is the business constantly exhausting itself, trying to hold back changes introduced by its competitors—as when it refuses to recognize a new product technology, a new service, or a new sales channel which the customer seems to prefer? Is foolish pride—as the song-writer puts it—causing the management to reject the verdict of the market-place? Is the business trying to be all things to all customers when their requirements and interests in the product are so fragmenting that some forfeiture of clientele and specialization of customer alignment obviously are needed? Is what the business considers a good salesman essentially a customer oriented man or is he a loyal "company" man, intent on making the customer understand his employer's policies? And finally, is the business using its resources and ability to innovate on tasks that smaller competitors with less overhead can handle better, or is it taxing its capacities to the fullest in undertakings that really challenge it?

These are fairly direct questions, but the answers turn on rather subtle differences in the marketing posture of a company. By and large, it is my observation that concerns which are in an active growth phase will pass this sort of test; those that have slowed down and see themselves as digging in for a defense against younger, more vigorous competitors in time will fail the test. Certainly, anyone who examines the turnover in rankings of the hundred largest corporations, or the turnover in the leadership position in even the smallest markets, cannot fail to see that the graveyards of business are full of those who conceived their obligations to the customer too narrowly.

Now, one might ask, how can the active growth phase of a company be infinitely prolonged? In the end, will not the constant adding of new products, new applications and new users lead to a loss of identity and a nomad-like wandering over the entire market terrain? And how does a company so oriented—or disoriented—respond to the attack of competition? Must every action pass the test of what is truly in the customer's interests? To be sure, these are important questions. But much of the difficulty is removed if we remember that it often is in the interests of both the customer and the company that it abandon a market, that it forego an existing product line and forfeit some present clientele to competition.

Where two groups of product users have different requirements in either the product or the services that go with it, the constant temptation is to suppress these differences, to force homogenization of the requirements, and we all are familiar with examples of the skillful use of price policy, engineering standards, advertising, and product design to such ends. Yet when such an unnatural marriage is challenged by a competitor who selects only one of the two user groups as his intended clientele, a competitor who aligns all his decisions in the interests of that single group and who brings to it a specially

designed product, then the profit position of the company that is straddling the issue is likely to become quite untenable. In the same way, a company may choose to deal with two unrelated markets in a manner that is dictated by the desire to apply some common technology or shared resource of production or distribution. The endeavor in each market being limited by the requirements of the opposite market, this company, too, is vulnerable to a competitor that specializes in only one of these undertakings. So I submit, it is no prescription of dogma but the hard facts of competition that argue for coupling a program of innovation and growth with a sharp pruning knife to cut out the commitments that threaten to compromise the marketing concept. If we all freely admitted our mistakes and were prompt in forfeiting a losing battle to competition, a great deal of pointless advertising could be turned into profit, and a substantial improvement could be worked in sales to other markets where efforts have been less than customer oriented due to the conflicts that have been baked in. Indeed, it is precisely because of this constant need for pruning that companies which were guided by pre-war notions of production efficiency, and which grew along lines of by-product diversification and vertical integration are in the gravest sort of difficulty today. Hence the most cogent argument for designing an industrial enterprise from the customer backward into the factory, rather than from the production process forward, so to speak, is that the success of the venture is becoming much less dependent on its production efficiency and much more dependent on its flexibility in adjusting to the risks posed by the changing requirements of its customers.

In closing now I want to briefly refer to the implications of this marketing concept to the society at large. Recently several provocative viewpoints have been set forth on the threat of under-consumption in our economy. David Riesman has raised the question as to whether business enthusiasm for the defense effort is entirely explained by patriotic and profit considerations. Melman in his recent book has theorized that a substantial part of the productive output of our economy is burned up in the form of administrative overhead—useless labor that we enjoy doing—but which does not lead to further gains in productivity.[2] Several recent books have looked askance at trends in advertising which attempt to subversively guide buying behavior. All in all, there is considerable evidence of a somewhat latent but chronic concern among businessmen with the possibility that we are able to produce more than people will consume. Hence, perhaps we do welcome the creation of markets by the government as a source of stability, and perhaps we are elaborating a style of management and distribution functions that is sort of subconsciously wasteful and antithetical to the interests of the consumer. There are two reasons why even in the presence

[2] Seymour Melman, *Dynamic Factors in Industrial Productivity* (New York: John Wiley & Sons, Inc., 1956).

of scant evidence such trends deserve sober consideration.

In the first place, if, as we all pray, this armed preparedness leads to peace rather than to war, then we will be thrown into an economic contest with Russia in which their political system, through lower labor costs and near equal technology, will battle for our foreign markets. If it turns out that we have built a style of competition and type of business venture in this country that burdens our native genius for manufacturing efficiency with a staggering load of nonproductive overhead and distribution costs, we then may find ourselves a country-island of democracy in a sea of communism. More hopefully, if we conceive of marketing as the work of finding out what the customer would consider a better product and a better way to sell it, and use motivation and all these other new research and communication techniques to help the customer to advise the business on such questions, and if we then apply all of our war-born technology to problems of human betterment, guiding the effort with a marketing concept that insists upon constant innovation—then the heat of competition in our economy will be made to yield up consumable value and real economic growth, and our concern with under-consumption and fear for the outcome of a contest with a state-directed economic system will be pointless in the extreme.

In the second place, there has been a long continuing harangue in Washington over the state of competition in American markets. Administered prices and conditions of oligopoly are deplored as a counterfeit type of competition which resists true economic progress. Ironically, the very same postwar period that heightened these concerns has witnessed the development of an intensive form of competition that has ranged far and wide across the traditional market and industry boundaries. As I see it, the greatest asset of our present industrial structure is that the declining number of companies in each market has been accompanied by an increasing number of markets for each company, so that today, more than ever before, hundreds of American businesses are sufficiently diversified to undertake the great risks of real innovation. In the final analysis, it is the basic purpose of the marketing concept to exploit this risk-taking and product developing capacity, reckoning with all the uncertainties and making a positive virtue out of an economic system that offers the customer a choice, and at that, a choice that is not confined to price alone, but one that explores the full dimensions of the consumption experience.

4 / Marketing and Economic Development

PETER F. DRUCKER

Marketing is generally the most neglected area in the economic life of developing countries. It is manufacturing or construction which occupies the greatest attention in these economies.

Yet marketing holds a key position in these countries. Its effectiveness as an engine of economic development with special emphasis on its ability to develop rapidly much needed entrepreneurial and managerial skills needs hardly any elaboration. Because it provides a systematic discipline in a vital area of economic activity it fills one of the greatest needs of a developing economy.

MARKETING AS A BUSINESS DISCIPLINE

The distinguished pioneer of marketing, whose memory we honor today, was largely instrumental in developing marketing as a systematic business discipline:

—In teaching us how to go about, in an orderly, purposeful and planned way to find and create customers;

—To identify and define markets; to create new ones and promote them;

—To integrate customers' needs, wants, and preferences, and the intellectual and creative capacity and skills of an industrial society, towards the design of new and better products and of new distributive concepts and processes.

On this contribution and similar ones of other Founding Fathers of marketing during the last half century rests the rapid emergence of marketing as perhaps the most advanced, certainly the most "scientific" of all functional business disciplines.

But Charles Coolidge Parlin also contributed as a Founding Father toward the development of marketing as a *social discipline.* He helped give us the awareness, the concepts, and the tools that make us understand marketing as a dynamic process of society through which business enterprise is integrated productively with society's purposes and human values. It is in marketing, as we now understand it, that we satisfy individual and social values, needs, and wants—be it through producing goods, supplying services, fostering innovation, or creating satisfaction. Marketing, as we have come to understand it, has its focus on the customer, that is, on the individual making decisions within a social structure and within a personal and social

SOURCE : From *Journal of Marketing,* vol. 22, January, 1958, pp. 252-259. Peter F. Drucker: Professor of Management, New York University.

value system. Marketing is thus the process through which economy is integrated into society to serve human needs.

I am not competent to speak about marketing in the first sense, marketing as a functional discipline of business. I am indeed greatly concerned with marketing in this meaning. One could not be concerned, as I am, with the basic institutions of industrial society in general and with the management of business enterprise in particular, without a deep and direct concern with marketing. But in this field I am a consumer of marketing alone—albeit a heavy one. I am not capable of making a contribution. I would indeed be able to talk about the wants and needs I have which I, as a consumer of marketing, hope that you, the men of marketing, will soon supply: a theory of pricing, for instance, that can serve, as true theories should, as the foundation for actual pricing decisions and for an understanding of price behavior; or a consumer-focused concept and theory of competition. But I could not produce any of these "new products" of marketing which we want. I cannot contribute myself. To use marketing language, I am not even "effective demand," in these fields as yet.

THE ROLE OF MARKETING

I shall today in my remarks confine myself to the second meaning in which marketing has become a discipline: The role of marketing in economy and society. And I shall single out as my focus the role of marketing in the economic development, especially of under-developed "growth" countries.

My thesis is very briefly as follows. Marketing occupies a critical role in respect to the development of such "growth" areas. Indeed marketing is the most important "multiplier" of such development. It is in itself in every one of these areas the least developed, the most backward part of the economic system. Its development, above all others, makes possible economic integration and the fullest utilization of whatever assets and productive capacity an economy already possesses. It mobilizes latent economic energy. It contributes to the greatest needs: that for the rapid development of entrepreneurs and managers, and at the same time it may be the easiest area of managerial work to get going. The reason is that, thanks to men like Charles Coolidge Parlin, it is the most systematized and, therefore, the most learnable and the most teachable of all areas of business management and entrepreneurship.

INTERNATIONAL AND INTERRACIAL INEQUALITY

Looking at this world of ours, we see some essentially new facts.

For the first time in man's history the whole world is united and unified. This may seem a strange statement in view of the conflicts and threats of suicidal wars that scream at us from every headline. But cinflict has always

been with us. What is new is that today all of mankind shares the same vision, the same objective, the same goal, the same hope, and believes in the same tools. This vision might, in gross over-simplification, be called "industrialization".

It is the belief that it is possible for man to improve his economic lot through systematic, purposeful, and directed effort—individually as well as for an entire society. It is the belief that we have the tools at our disposal—the technological, the conceptual, and the social tools—to enable man to raise himself, through his own efforts, at least to a level that we in this country would consider poverty, but which for most of our world would be almost unbelievable luxury.

And this is an irreversible new fact. It has been made so by these true agents of revolution in our times: the new tools of communication—the dirt road, the truck, and the radio, which have penetrated even the furthest, most isolated and most primitive community.

This is new, and cannot be emphasized too much and too often. It is both a tremendous vision and a tremendous danger in that catastrophe must result if it cannot be satisfied, at least to a modest degree.

But at the same time we have a new, unprecedented danger, that of international and interracial inequality. We on the North American continent are a mere tenth of the world population, including our Canadian friends and neighbors. But we have at least 75 per cent of the world income. And the 75 per cent of the world population whose income is below $ 100 per capita a year receive together perhaps no more than 10 per cent of the world's income. This is inequality of income, as great as anything the world has ever seen. It is accompanied by very high equality of income in the developed countries, especially in our where we are in the process of proving that an industrial society does not have to live in extreme tension between the few very rich and the many very poor as lived all earlier societies of man. But what used to be national inequality and economic tension is now rapidly becoming international (and unfortunately also interracial) inequality and tension.

This is also brand new. In the past there were tremendous differences between societies and cultures: in their beliefs, their concepts, their ways of life, and their knowledge. The Frankish knight who went on Crusade was an ignorant and illiterate boor, according to the standards of the polished courtiers of Constantinople or of his Moslem enemies. But economically his society and this were exactly alike. They had the same sources of income, the same productivity of labor, the same forms and channels of investment, the same economic institutions, and the same distribution of income and wealth. Economically the Frankish knight, however much a barbarian he appeared, was at home in the societies of the East; and so was his serf. Both fitted in immediately and without any difficulty.

And this has been the case of all societies that went above the level of purely primitive tribe.

The inequality in our world today, however, between nations and races, is therefore a new—and a tremendously dangerous—phenomenon.

What we are engaged in today is essentially a race between the promise of economic development and the threat of international world-wide class war. The economic development is the opportunity of this age. The class war is the danger. Both are new. Both are indeed so new that most of us do not even see them as yet. But they are the essential economic realities of this industrial age of ours. And whether we shall realize the opportunity or succumb to danger will largely decide not only the economic future of this world—it may largely decide its spiritual, its intellectual, its political, and its social future.

SIGNIFICANCE OF MARKETING

Marketing is central in this new situation. For marketing is one of our most potent levers to convert the danger into the opportunity.

To understand this we must ask: What do we mean by "under-developed"?

The first answer is, of course, that we mean areas of very low income. But income is, after all, a result. It is a result first of extreme agricultural over-population in which the great bulk of the people have to find a living on the land which, as a result, cannot even produce enough food to feed them, let alone produce a surplus. It is certainly a result of low productivity. And both, in a vicious circle, mean that there is not enough capital for investment, and very low productivity of what is being invested—owing largely to misdirection of investment into unessential and unproductive channels.

All this we know today and understand. Indeed we have learned during the last few years a very great deal both about the structure of an under-developed economy and about the theory and dynamics of economic development.

What we tend to forget, however, is that the essential aspect of an "under-developed" economy and the factor the absence of which keeps it "under-developed," is the inability to organize economic efforts and energies, to bring together resources, wants, and capacities, and so to convert a self-limiting static system into creative, self-generating organic growth.

And this is where marketing comes in.

Lack of Development in "Under-developed" Countries

(1) First, in every "under-developed" country I know of, marketing is the most under-developed—or the least developed—part of the economy, if only because of the strong, pervasive prejudice against the "middleman".

As a result, there countries are stunted by inability to make effective use of the little they have. Marketing might by itself go far toward changing the entire economic tone of the existing system—without any change in methods of production, distribution of population, or of income.

It would make the producers capable of producing marketable products by providing them with standards, with quality demands, and with specifications for their product. It would make the product capable of being brought to markets instead of perishing on the way. And it would make the consumer capable of discrimination, that is, of obtaining the greatest value for his very limited purchasing power.

In every one of these countries, marketing profits are characteristically low. Indeed the people engaged in marketing barely eke out a subsistence living. And "mark-ups" are minute by our standards. But marketing costs are outrageously high. The waste in distribution and marketing, if only from spoilage or from the accumulation of unsalable inventories that clog the shelves for years, has to be seen to be believed. And marketing service is by and large all but non-existent.

What is needed in any "growth" country to make economic development realistic, and at the same time produce a vivid demonstration of what economic development can produce, is a marketing system:

— A system of physical distribution;
— A financial system to make possible the distribution of goods; and
— Finally actual marketing, that is, an actual system of integrating wants, needs, and purchasing power of the consumer with capacity and resources of production.

This need is largely masked today because marketing is so often confused with the traditional "trader and merchant" of which every one of these countries has more than enough. It would be one of our most important contributions to the development of "under-developed" countries to get across the fact that marketing is something quite different.

It would be basic to get across the triple function of marketing:

— The function of crystallizing and directing demand for maximum productive effectiveness and efficiency;
— The function of guiding production purposefully toward maximum consumer satisfaction and consumer value;
— The function of creating discrimination that then gives rewards to those who really contribute excellence, and that then also penalize the monopolist, the slothful, or those who only want to take but do not want to contribute or to risk.

Utilization by the Entrepreneur

(2) Marketing is also the most easily accessible "multiplier" of managers

and entrepreneurs in an "under-developed" growth area. And managers and entrepreneurs are the foremost need of these countries. In the first place, "economic development" is not a force of nature. It is the result of the action, the purposeful, responsible, risk-taking action, of men as entrepreneurs and managers.

Certainly it is the entrepreneur and manager who alone can convey to the people of these countries an understanding of what economic development means and how it can be achieved.

Marketing can convert latent demand into effective demand. It cannot, by itself, create purchasing power. But it can uncover and channel all purchasing power that exists. It can, therefore, create rapidly the conditions for a much higher level of economic activity than existed before, can create the opportunities for the entrepreneur.

It then can create the stimulus for the development of modern, responsible, professional management by creating opportunity for the producer who knows how to plan, how to organize, how to lead people, how to innovate.

In most of these countries markets are of necessity very small. They are too small to make it possible to organize distribution for a single-product line in any effective manner. As a result, without a marketing organization, many products for which there is an adequate demand at a reasonable price cannot be distributed; or worse, they can be produced and distributed only under monopoly conditions. A marketing system is needed which serves as the joint and common channel for many producers if any of them is to be able to come into existence and to stay in existence.

This means in effect that a marketing system in the "under-developed" countries is the *creator of small business,* is the only way in which a man of vision and daring can become a businessman and an entrepreneur himself. This is thereby also the only way in which a true middle class can develop in the countries in which the habit of investment in productive enterprise has still to be created.

Developer of Standards

(3) Marketing in an "under-developed" country is the developer of standards—of standards for product and service as well as of standards of conduct, of integrity, of reliability, of foresight, and of concern for the basic long-range impact of decisions on the customer, the supplier, the economy, and the society.

Rather than go on making theoretical statements let me point to one illustration: The impact Sears Roebuck has had on several countries of Latin America. To be sure, the countries of Latin America in which Sears operates—Mexico, Brazil, Cuba, Venezuela, Colombia, and Peru—are not "under-developed" in the same sense in which Indonesia or the Congo are "under-developed". Their average income, although very low by our standards, is at least two times, perhaps as much as four or five times, that

of the truly "under-developed" countries in which the bulk of mankind still live. Still in every respect except income level these Latin American countries are at best "developing". And they have all the problems of economic development—perhaps even in more acute form than the countries of Asia and Africa, precisely because their development has been so fast during the last ten years.

It is also true that Sears in these countries is not a "low-price" merchandiser. It caters to the middle class in the richer of these countries, and to the upper middle class in the poorest of these countries. Incidentally, the income level of these groups is still lower than that of the worker in the industrial sector of our economy.

Still Sears is a mass-marketer even in Colombia or Peru. What is perhaps even more important, it is applying in these "under-developed" countries exactly the same policies and principles it applies in this country, carries substantially the same merchandise (although most of it produced in the countries themselves), and applies the same concepts of marketing it uses in Indianapolis or Philadelphia. Its impact and experience are, therefore, a fair test of what marketing principles, marketing knowledge, and marketing techniques can achieve.

The impact of this one American business which does not have more than a mere handful of stores in these countries and handles no more than a small fraction of the total retail business of these countries is truly amazing. In the first place, Sears' latent purchasing power has fast become actual purchasing power. Or, to put it less theoretically, people have begun to organize their buying and to go out for value in what they do buy.

Secondly, by the very fact that it builds one store in one city, Sears forces a revolution in retailing throughout the whole surrounding area. It forces store modernization. It forces consumer credit. It forces a different attitude toward the customer, toward the store clerk, toward the supplier, and toward the merchandise itself. It forces other retailers to adopt modern methods of pricing, of inventory control, of training, of window display, and what have you.

The greatest impact Sears has had, however, is in the multiplication of new industrial business for which Sears creates a marketing channel. Because it has had to sell goods manufactured in these countries rather than import them (if only because of foreign exchange restrictions), Sears has been instrumental in getting established literally hundreds of new manufacturers making goods which, a few years ago, could not be made in the country, let alone be sold in adequate quantity. Simply to satisfy its own marketing needs, Sears has had to insist on standards of workmanship, quality, and delivery—that is, on standards of production management, of technical management, and above all of the management of people—which, in a few short years, have advanced the art and science of management in these countries by at least a generation.

I hardly need to add that Sears is not in Latin America for reasons of

philanthropy, but because it is good and profitable business with extraordinary growth potential. In other words, Sears is in Latin America because marketing is the major opportunity in a "growth economy"—precisely because its absence is a major economic gap and the greatest need.

The Discipline of Marketing

(4) Finally, marketing is critical in economic development because marketing has become so largely systematized, so largely both learnable and teachable. It is the discipline among all our business disciplines that has advanced the furthest.

I do not forget for a moment how much we still have to learn in marketing. But we should also not forget that most of what we have learned so far we have learned in a form in which we can express it in general concepts, in valid principles and, to a substantial degree, in quantifiable measurements. This, above all others, was the achievement of that generation to whom Charles Coolidge Parlin was leader and inspiration.

A critical factor in this world of ours is the learnability and teachability of what it means to be an entrepreneur and manager. For it is the entrepreneur and the manager who alone can cause economic development to happen. The world needs them, therefore, in very large numbers; and it needs them fast.

Obviously this need cannot be supplied by our supplying entrepreneurs and managers, quite apart from the fact that we hardly have the surplus. Money we can supply. Technical assistance we can supply, and should supply more. But the supply of men we can offer to the people in the "underdeveloped" countries is of necessity a very small one.

The demand is also much too urgent for it to be supplied by slow evolution through experience, or through dependence on the emergence of "naturals". The danger that lies in the inequality today between the few countries that have and the great many countries that have not is much too great to permit a wait of centuries. Yet it takes centuries if we depend on experience and slow evolution for the supply of entrepreneurs and managers adequate to the needs of a modern society.

There is only one way in which man has ever been able to short-cut experience, to telescope development, in other words, to *learn something.* That way is to have available the distillate of experience and skill in the form of knowledge, of concepts, of generalization, of measurement— in the form of *discipline,* in other words.

THE DISCIPLINE OF ENTREPRENEURSHIP

Many of us today are working on the fashioning of such a discipline of entrepreneurship and management. Maybe we are further along than most of us realize.

Certainly in what has come to be called "Operation Research and Synthesis" we have the first beginnings of a systematic approach to the entrepreneurial task of purposeful risk-taking and innovation—so far only an approach, but a most promising one, unless indeed we become so enamored with the gadgets and techniques as to forget purpose and aim.

We are at the beginning perhaps also of an understanding of the basic problems of organizing people of diversified and highly advanced skill and judgment together in one effective organization, although again no one so far would, I am convinced, claim more for us than that we have begun at last to ask intelligent questions.

But marketing, although it only covers one functional area in the field, has something that can be called a discipline. It has developed general concepts, that is, theories that explain a multitude of phenomena in simple statements. It even has measurements that record "facts" rather than opinions. In marketing, therefore, we already possess a learnable and teachable approach to this basic and central problem not only of the "under-developed" countries but of all countries. All of us have today the same survival stake in economic development. The risk and danger of international and interracial inequality are simply too great.

Marketing is obviously not a cure-all, not a paradox. It is only one thing we need. But it answers a critical need. At the same time marketing is most highly developed.

Indeed without marketing as the hinge on which to turn, economic development will almost have to take the totalitarian form. A totalitarian system can be defined economically as one in which economic development is being attempted without marketing, indeed as one in which marketing is suppressed. Precisely because it first looks at the values and wants of the individual, and because it then develops people to act purposefully and responsibly—that is, because of its effectiveness in developing a free economy—marketing is suppressed in a totalitarian system. If we want economic development in freedom and responsibility, we have to build it on the development of marketing.

In the new and unprecedented world we live in, a world which knows both a new unity of vision and growth and a new and most dangerous cleavage, marketing has a special and central role to play. This role goes:

— Beyond "getting the stuff out the back door";
— Beyond "getting the most sales with the least cost";
— Beyond "the optimal integration of our values and wants as customers, citizens, and persons, with our productive resources and intellectual achievements"—the role marketing plays in a developed society.

In a developing economy, marketing is, of course, all of this. But in addition, in an economy that is striving to break the age-old bondage of

man to misery, want, and destitution, marketing is also the catalyst for the transmutation of latent resources into actual resources, of desires into accomplishments, and the development of responsible economic leaders and informed economic citizens.

II / EFFECT OF THE MARKET ON THE ACTIVITIES OF THE FIRM

5 / *Rational Behavior and Economic Behavior*

GEORGE KATONA

Proper understanding of consumer behavior is a vital necessity if a firm is to be market-oriented. This paper provides insights into how psychological principles can be of value in analyzing behavior in the market place and understanding rationality. Also, psychology can profit from the study of economic behavior since many aspects of behavior, and among them the problems of rationality, can be studied most fruitfully in the economic field.

While attempts to penetrate the boundary lines between psychology and sociology have been rather frequent during the last few decades, psychologists have paid little attention to the problems with which another sister discip- line, economics, is concerned. One purpose of this paper is to arouse interest among psychologists in studies of economic behavior. For that pur- pose it will be shown that psychological principles may be of great value in clarifying basic questions of economics and that the psychology of habit formation, of motivation, and of group belonging may profit from studies of economic behavior.

A variety of significant problems, such as those of the business cycle or inflation, of consumer saving or business investment, could be chosen for the purpose of such demonstration. This paper, however, will be concerned with the most fundamental assumption of economics, the principle of rationality. In order to clarify the problems involved in this principle, which have been neglected by contemporary psychologists, it will be necessary to contrast the most common forms of methodology used in economics with those employed in psychology and to discuss the role of empirical research in the social sciences.

THEORY AND HYPOTHESES

Economic theory represents one of the oldest and most elaborate theoretical structures in the social sciences. However, dissatisfaction with the achievements and uses of economic theory has grown considerably during the past few decades on the part of economists who are interested in what actually goes on in economic life. And yet leading sociologists and psychologists have recently declared "Economics is today, in a theoretical

SOURCE : From *Psychological Review*, vol. 60, September, 1953, pp. 307-318.
George Katona: Director, Economic Research Program, Survey Research Center, University of Michigan.

sense, probably the most highly elaborated, sophisticated, and refined of the disciplines dealing with action" (**15**, p. 28).[1]

To understand the scientific approach of economic theorists, we may divide them into two groups. Some develop an a priori system from which they deduce propositions about how people *should* act under certain assumptions. Assuming that the sole aim of businessmen is profit maximization, these theorists deduce propositions about marginal revenues and marginal costs, for example, that are not meant to be suited for testing. In developing formal logics of economic action, one of the main considerations is elegance of the deductive system, based on the law of parsimony. A wide gap separates these theorists from economic research of an empirical-statistical type which registers what they call aberrations or deviations, due to human frailty, from the norm set by theory.

A second group of economic theorists adheres to the proposition that it is the main purpose of theory to provide hypotheses that can be tested. This group acknowledges that prediction of future events represents the most stringent test of theory. They argue, however, that reality is so complex that it is necessary to begin with simplified propositions and models which are known to be unreal and not testable.[2] Basic among these propositions are the following three which traditionally have served to characterize the economic man or the rational man:

1. The principle of complete information and foresight. Economic conditions—demand, supply, prices, etc.—are not only given but also known to the rational man. This applies as well to future conditions about which there exists no uncertainty, so that rational choice can always be made. (In place of the assumption of certainty of future developments, we find nowadays more frequently the assumption that risks prevail but the probability of occurrence of different alternatives is known; this does not constitute a basic difference.)

2. The principle of complete mobility. There are no institutional or psychological factors which make it impossible, or expensive, or slow, to translate the rational choice into action.

[1] The quotation is from an introductory general statement signed by T. Parsons, E. A. Shils, G. W. Allport, C. Kluckhohn, H. A. Murray, R. R. Sears, R. C. Sheldon, S. A. Stouffer, and E. C. Tolman. The term "action" is meant to be synonymous with "behavior".

[2] A variety of methods used in economic research differ, of course, from those employed by the two groups of economic theorists. Some research is motivated by dissatisfaction with the traditional economic theory; some is grounded in a systematization greatly different from traditional theory (the most important example of such systematization is national income accounting); some research is not clearly based on any theory; finally, some research has great affinity with psychological and sociological studies.

3. The principle of pure competition. Individual action has no great influence on prices because each man's choice is independent from any other person's choice and because there are no "large" sellers or buyers. Action is the result of individual choice and is not group-determined.

Economic theory is developed first under these assumptions. The theorists then introduce changes in the assumptions so that the theory may approach reality. One such step consists, for instance, of introducing large-scale producers, monopolists, and oligopolists, another of introducing time lags, and still another of introducing uncertainty about the probability distribution of future events. The question raised in each case is this: Which of the original propositions needs to be changed, and in what way, in view of the new assumptions?

The fact that up to now the procedure of gradual approximation to reality has not been completely successful does not invalidate the method. It must also be acknowledged that propositions were frequently derived from unrealistic economic models which were susceptible to testing and stimulated empirical research. In this paper we shall point to a great drawback of this method of starting out with a simplified a priori system and making it gradually more complex and more real—by proceeding in this way one tends to lose sight of important problems and to disregard them.

The methods most commonly used in psychology may appear at first sight to be quite similar to the methods of economics which have just been described. Psychologists often start with casual observations, derive from them hypotheses, test those through more systematic observations, reformulate and revise their hypotheses accordingly, and test them again. The process of hypotheses-observations-hypotheses-observations often goes on with no end in sight. Differences from the approach of economic theory may be found in the absence in psychological research of detailed systematic elaboration prior to any observation. Also, in psychological research, findings and generalizations in one field of behavior are often considered as hypotheses in another field of behavior. Accordingly, in analyzing economic behavior [3] and trying to understand rationality, psychologists can draw on (*a*) the theory of learning and thinking, (*b*) the theory of group belonging, and (*c*) the theory of motivation. This will be done in this paper.

HABITUAL BEHAVIOR AND GENUINE DECISION MAKING

In trying to give noneconomic examples of "rational calculus", economic

[3] The expression "economic behavior" is used in this paper to mean behavior concerning economic matters (spending, saving, investing, pricing, etc.). Some economic theorists use the expression to mean the behavior of the "economic man", that is, the behavior postulated in their theory of rationality.

theorists have often referred to gambling. From some textbooks one might conclude that the most rational place in the world is the Casino in Monte Carlo where odds and probabilities can be calculated exactly. In contrast, some mathematicians and psychologists have considered scientific discovery and the thought processes of scientists as the best examples of rational or intelligent behavior.[4] An inquiry about the possible contributions of psychology to the analysis of rationality may then begin with a formulation of the differences between (*a*) associative learning and habit formation and (*b*) problem solving and thinking.

The basic principle of the first form of behavior is repetition. Here the argument of Guthrie holds: "The most certain and dependable information concerning what a man will do in any situation is information concerning what he did in that situation on its last occurrence" (**4**, p. 228). This form of behavior depends upon the frequency of repetition as well as on its recency and on the success of past performances. The origins of habit formation have been demonstrated by experiments about learning nonsense syllables, lists of words, mazes, and conditioned responses. Habits thus formed are to some extent automatic and inflexible.

In contrast, problem-solving behavior has been characterized by the arousal of a problem or question, by deliberation that involves reorganization and "direction", by understanding of the requirements of the situation, by weighing of alternatives and taking their consequences into consideration and, finally, by choosing among alternative courses of action.[5] Scientific discovery is not the only example of such procedures; they have been demonstrated in the psychological laboratory as well as in a variety of real-life situations. Problem solving results in action which is new rather than repetitive; the actor may have never behaved in the same way before and may not have learned of any others having behaved in the same way.

Some of the above terms, defined and analyzed by psychologists, are also being used by economists in their discussion of rational behavior. In discussion, for example, a manufacturer's choice between erecting or not erecting a new factory, or raising or not raising his prices or output, reference is usually made to deliberation and to taking the consequences

[4] Reference should be made first of all to Max Wertheimer who in his book *Productive Thinking* (**17**) uses the terms "sensible" and "intelligent" rather than "rational". Since we are mainly interested here in deriving conclusions from the psychology of thinking, the discussion of psychological principles will be kept extremely brief (see **6** and **8**, Chaps. 3, 4).

[5] Cf. the following statement by a leading psychoanalyst: "Rational behavior is behavior that is effectively guided by an understanding of the situation to which one is reacting" (3 p. 16). French adds two steps that follow the choice between alternative goals, namely, commitment to a goal and commitment to a plan to reach a goal.

of alternative choices into consideration. Nevertheless, it is not justified to identify problem-solving behavior with rational behavior. From the point of view of an outside observer, habitual behavior may prove to be fully rational or the most appropriate way of action under certain circumstances. All that is claimed here is that the analysis of two forms of behavior—habitual versus genuine decision making—may serve to clarify problems of rationality. We shall proceed therefore by deriving six propositions from the psychological principles. To some extent, or in certain fields of behavior, these are findings or empirical generalizations; to some extent, or in other fields of behavior, they are hypotheses:

1. Problem-solving behavior is a relatively rare occurrence. It would be incorrect to assume that everyday behavior consistently manifests such features as arousal of a problem, deliberation, or taking consequences of the action into consideration. Behavior which does not manifest these characteristics predominates in everyday life and in economic activities as well.

2. The main alternative to problem-solving behavior is not whimsical or impulsive behavior (which was considered the major example of "irrational" behavior by nineteenth century philosophers). When genuine decision making does not take place, habitual behavior is the most usual occurrence: people act as they have acted before under similar circumstances, without deliberating and choosing.

3. Problem-solving behavior is recognized most commonly as a deviation from habitual behavior. Observance of the established routine is abandoned when in driving home from my office, for example, I learn that there is a parade in town and choose a different route, instead of automatically taking the usual one. Or, to mention an example of economic behavior: Many businessmen have rules of thumb concerning the timing of reorders of merchandise; yet sometimes they decide to place new orders even though their inventories have not reached the usual level of depletion (for instance, because they anticipate price increases), or not to order merchandise even though that level has been reached (because they expect a slump in sales).

4. Strong motivational forces—stronger than those which elicit habitual behavior—must be present to call forth problem-solving behavior. Being in a "crossroad situation", facing "choice points", or perceiving that something new has occurred are typical instances in which we are motivated to deliberate and choose. Pearl Harbor and the Korean aggression are extreme examples of "new" events; economic behavior of the problem-solving type was found to have prevailed widely after these events.

5. Group belonging and group reinforcement play a substantial role in changes of behavior due to problem solving. Many people become aware of the same events at the same time; our mass media provide the same information and often the same interpretation of events to groups of people (to businessmen, trade union members, sometimes to all Americans). Changes

in behavior resulting from new events may therefore occur among very many people at the same time. Some economists (for instance, Lord Keynes, see 9, p. 95) argued that consumer optimism and pessimism are unimportant because usually they will cancel out; in the light of socio-psychological principles, however, it is probable, and has been confirmed by recent surveys, that a change from optimistic to pessimistic attitudes, or vice versa, sometimes occurs among millions of people at the same time.

6. Changes in behavior due to genuine decision making will tend to be substantial and abrupt, rather than small and gradual. Typical examples of action that results from genuine decisions are cessation of purchases or buying waves, the shutting down of plants or the building of new plants, rather than an increase or decrease of production by 5 or 10 per cent.[6]

Because of the preponderance of individual psychological assumptions in classical economics and the emphasis placed on group behavior in this discussion, the change in underlying conditions which has occurred during the last century may be illustrated by a further example. It is related—the author does not know whether the story is true or fictitious—that the banking house of the Rothschilds, still in its infancy at that time, was one of the suppliers of the armies of Lord Wellington in 1815. Nathan Mayer Rothschild accompanied the armies and was present at the Battle of Waterloo. When he became convinced that Napoleon was decisively defeated, he released carrier pigeons so as to transmit the news to his associates in London and reverse the commodity position of his bank. The carrier pigeons arrived in London before the news of the victory became public knowledge. The profits thus reaped laid, according to the story, the foundation to the outstanding position of the House of Rothschild in the following decades.

The decision to embark on a new course of action because of new events was then made by one individual for his own profit. At present, news of a battle, or of change of government, or of rearmament programs, is transmitted in short order by press and radio to the public at large. Businessmen —the manufacturers or retailers of steel or clothing, for instance—usually receive the same news about changes in the price of raw materials or in demand, and often consult with each other. Belonging to the same group means being subject to similar stimuli and reinforcing one another in making decisions. Acting in the same way as other members of one's group or of a reference group have acted under similar circumstances may also occur without deliberation and choice. New action by a few manufacturers will, then, frequently or even usually not be compensated by reverse action on the part of others. Rather the direction in which the economy of an entire country moves—and often the world economy as well

[6] Some empirical evidence supporting these six propositions in the area of economic behavior has been assembled by the Survey Research Center of the University of Michigan (see 8 and also 7).

—will tend to be subject to the same influences.

After having indicated some of the contributions which the application of certain psychological principles to economic behavior may make, we turn to contrasting that approach with the traditional theory of rationality. Instead of referring to the formulations of nineteenth century economists, we shall quote from a modern version of the classical trend of thought. The title of a section in a recent article by Kenneth J. Arrow is "The Principle of Rationality". He describes one of the criteria of rationality as follows: "We can imagine the individual as listing, once and for all, all conceivable consequences of his actions in order of his preference for them" (**1**, p. 135). We are first concerned with the expression "all conceivable consequences". This expression seems to contradict the principle of selectivity of human behavior. Yet habitual behavior is highly selective since it is based on (repeated) past experience, and problem-solving behavior likewise is highly selective since reorganization is subject to a certain direction instead of consisting of trial (and error) regarding all possible avenues of action.

Secondly, Arrow appears to identify rationality with consistency in the sense of repetition of the same choice. It is part and parcel of rational behavior, according to Arrow, that an individual "makes the same choice each time he is confronted with the same set of alternatives" (**1**, p. 135).[7] Proceeding in the same way on successive occasions appears, however, a characteristic of habitual behavior. Problem-solving behavior, on the other hand, is flexible. Rationality may be said to reflect adaptability and ability to act in a new way when circumstances demand it, rather than to consist of rigid or repetitive behavior.

Thirdly, it is important to realize the differences between the concepts action, decision, and choice. It is an essential feature of the approach derived from considering problem-solving behavior that there is action without deliberate decision and choice. It then becomes one of the most important problems of research to determine under what conditions genuine decision and choice occur prior to an action. The three concepts are, however, used without differentiation in the classical theory of rationality and also, most recently, by Parsons and Shils. According to the theory of these authors, there are "five discrete choices (explicit or implicit) which every actor makes before he can act" (**15**, p. 78); before there is action "a decision must always be made (explicitly or implicitly, consciously or unconsciously" **15**, p. 89).

There exists, no doubt, a difference in terminology, which may be clarified by mentioning a simple case: Suppose my telephone rings; I lift

[7] In his recent book Arrow adds after stating that the economic man "will make the same decision each time he is faced with the same range of alternatives": "The ability to make consistent decisions is one of the symptoms of an integrated personality" (**2**, p. 2).

the receiver with my left hand and say. "Hello". Should we then argue that I made several choices, for instance, that I decided not to lift the receiver with my right hand and not to say "Mr. Katona speaking"? According to our use of the terms decision and choice, my action was habitual and did not involve "taking consequences into consideration". Parsons and Shils use the terms decision and choice in a different sense, and Arrow may use the terms "all conceivable consequences" and "same set of alternatives" in a different sense from the one employed in this paper. But the difference between the two approaches appears to be more far-reaching. By using the terminology of the authors quoted, and by constructing a theory of rational action on the basis of this terminology, fundamental problems are disregarded. If every action by definition presupposes decision making, and if the malleability of human behavior is not taken into consideration, a one-sided theory of rationality is developed and empirical research is confined to testing a theory which covers only some of the aspects of rationality.

This was the case recently in experiments devised by Mosteller and Nogee. These authors attempt to test basic assumptions of economic theory, such as the rational choice among alternatives, by placing their subjects in a gambling situation (a variation of poker dice) and compelling them to make a decision, namely, to play or not to play against the experimenter. Through their experiments the authors prove that "it is feasible to measure utility experimentally" (**14**, p. 403) but they do not shed light on the conditions under which rational behavior occurs or on the inherent features of rational behavior. Experiments in which making a choice among known alternatives is prescribed do not test the realism of economic theory.

MAXIMIZATION

Up to now we have discussed only one central aspect of rationality—means rather than ends. The end of rational behavior, according to economic theory, is maximization of profits in the case of business firms and maximization of utility in the case of people in general.

A few words, first, on maximizing profits. This is usually considered the simpler case because it is widely held (*a*) that business firms are in business to make profits and (*b*) that profits, more so than utility, are a quantitative, measurable concept.

[8] If I have reason not to make known that I am at home, I may react to the ringing of the telephone by fright, indecision, and deliberation (should I lift the receiver or let the telephone ring?) instead of reacting in the habitual way. This is an example of problem-solving behavior characterized as deviating from habitual behavior. The only example of action mentioned by Parsons and Shils, "a man driving his automobile to a lake to go fishing", may be habitual or may be an instance of genuine decision making.

When empirical research, most commonly in the form of case studies, showed that businessmen frequently strove for many things in addition to profits or in place of profits, most theorists were content with small changes in their systems. They redefined profits so as to include long-range profits and what has been called nonpecuniary or psychic profits. Striving for security or for power was identified with striving for profits in the more distant future; purchasing goods from a high bidder who was a member of the same fraternity as the purchaser, rather than from the lowest bidder—to cite an example often used in textbooks—was thought to be maximizing of nonpecuniary profits. Dissatisfaction with this type of theory construction is rather widespread. For example, a leading theorist wrote recently:

> If *whatever* a businessman does is explained by the principle of profit maximization—because he does what he likes to do, and he likes to do what maximizes the sum of his pecuniary and non-pecuniary profits—the analysis acquires the character of a system of definitions and tautologies, and loses much of its value as an explanation of reality (**13**, p. 526).

The same problem is encountered regarding maximization of utility. Arrow defines rational behavior as follows: "...among all the combinations of commodities an individual can afford, he chooses that combination which maximizes his utility or satisfaction" (**1**, p. 135) and speaks of the "traditional identification of rationality with maximization of some sort" (**2**, p. 3). An economic theorist has recently characterized this type of definition as follows:

> The statement that a person seeks to maximize utility is (in many versions) a tautology: it is impossible to conceive of an observational phenomenon that contradicts it.... What if the theorem is contradicted by observation: Samuelson says it would not matter much in the case of utility theory; I would say that it would not make the slightest difference. For there is a free variable in his system: the tastes of consumers.... Any contradiction of a theorem derived from utility theory can always be attributed to a change of tastes, rather than to an error in the postulates or logic of the theory (**16**, pp. 603 f.).[9]

What is the way out of this difficulty? Can psychology, and specifically the psychology of motivation, help? We may begin by characterizing the prevailing economic theory as a single-motive theory and contrast it with a theory of multiple motives. Even in case of a single decision of one individual, multiplicity of motives (or of vectors or forces in the field),

[9] The quotation refers specifically to Samuelson's definition but also applies to that of Arrow.

some reinforcing one another and some conflicting with one another, is the rule rather than the exception. The motivational patterns prevailing among different individuals making the same decision need not be the same; the motives of the same individual who is in the same external situation at different times may likewise differ. This approach opens the way (*a*) for a study of the relation of different motives to different forms of behavior and (*b*) for an investigation of changes in motives. Both problems are disregarded by postulating a single-motive theory and by restricting empirical studies to attempts to confirm or contradict that theory.

The fruitfulness of the psychological approach may be illustrated first by a brief reference to business motivation. We may rank the diverse motivational patterns of businessmen by placing the striving for high immediate profits (maximization of short-run profits, to use economic terminology; charging whatever the market can bear, to use a popular expression) at one extreme of the scale. At the other extreme we place the striving for prestige or power. In between we discern striving for security, for larger business volume, or for profits in the more distant future. Under what kinds of business conditions will motivational patterns tend to conform with the one or the other end of the scale? Preliminary studies would seem to indicate that the worse the business situation is, the more frequent is striving for high immediate profits, and the better the business situation is, the more frequent is striving for nonpecuniary goals (see **8** pp. 193-213).

Next we shall refer to one of the most important problems of consumer economics as well as of business-cycle studies, the deliberate choice between saving and spending. Suppose a college professor receives a raise in his salary or makes a few hundred extra dollars through a publication. Suppose, furthermore, that he suggests thereupon to his wife that they should buy a television set, while the wife argues that the money should be put in the bank as a reserve against a "rainy day". Whatever the final decision may be, traditional economic theory would hold that the action which gives the greater satisfaction was chosen. This way of theorizing is of little value. Under what conditions will one type of behavior (spending) and under what conditions will another type of behavior (saving) be more frequent? Psychological hypotheses according to which the strength of vectors is related to the immediacy of needs have been put to a test through nationwide surveys over the past six years.[10] On the basis of survey findings the following tentative generalization was established: Pessimism, insecurity, expectation of income declines or bad times in the near future promote saving (putting the extra money in the bank), while

[10] In the Surveys of Consumer Finances, conducted annually since 1946 by the Survey Research Center of the University of Michigan for the Federal Reserve Board and reported in the *Federal Reserve Bulletin*. See also **8** and a forthcoming publication of the Survey Research Center on consumer buying and inflation during 1950-52.

optimism, feeling of security, expectation of income increases, or good times promote spending (buying the television set, for instance).

Psychological hypotheses, based on a theory of motivational patterns which change with circumstances and influence behavior, thus stimulated empirical studies. These studies, in turn, yielded a better understanding of past developments and also, we may add, better predictions of forthcoming trends than did studies based on the classical theory (see footnote 10). On the other hand, when conclusions about utility or rationality were made on an a priori basis, researchers lost sight of important problems. [11]

DIMINISHING UTILITY, SATURATION, AND ASPIRATION

Among the problems to which the identification of maximizing utility with rationality gave rise, the measurability of utility has been prominent. At present the position of most economists appears to be that while interpersonal comparison of several consumers' utilities is not possible, and while cardinal measures cannot be attached to the utilities of one particular consumer, ordinal ranking of the utilities of each individual can be made. It is asserted that I can always say either that I prefer *A* to *B*, or that I am indifferent to having *A* or *B*, or that I prefer *B* to *A*. The theory of indifference curves is based on this assumption.

In elaborating the theory further, it is asserted that rational behavior consists not only of preferring more of the same goods to less ($2 real wages to $1, or two packages of cigarettes to one package, for the same service performed) but also of deriving diminishing increments of satisfaction from successive units of a commodity. [12] In terms of an old textbook example, one drink of water has tremendous value to a thirsty traveler in a desert; a second, third, or fourth drink may still have some value but less and less so; an *n*th drink (which he is unable to carry along) has no value at all. A generalization derived from this principle is that the more of a commodity or the more money a person has, the smaller are his needs for that commodity or for money, and the smaller his incentives to add to what he has.

In addition to using this principle of saturation to describe the behavior of the rational man, modern economists applied it to one of the most pressing problems of contemporary American economy. Prior to World War II the American people (not counting business firms) owned about 45 billion dollars in liquid assets (currency, bank deposit, government bonds) and these funds

[11] It should not be implied that the concepts of utility and maximization are of no value for empirical research. Comparison between maximum utility as determined from the vantage point of an observer with the pattern of goals actually chosen (the "subjective maximum"), which is based on insufficient information, may be useful. Similar considerations apply to such newer concepts as "minimizing regrets" and the "minimax".

[12] This principle of diminishing utility was called a "fundamental tendency of human nature" by the great nineteenth century economist, Alfred Marshall.

were highly concentrated among relatively few families; most individ families held no liquid assets at all (except for small amounts of currency By the end of the year 1945, however, the personal liquid-asset holdings ha risen to about 140 billion dollars and four out of every five families owned some bank deposits or war bonds. What is the effect of this great change in spending and saving? This question has been answered by several leadin economists in terms of the saturation principle presented above. "The rat of saving is . . . a diminishing function of the wealth the individual holds (5, p. 499) because "the availability of liquid assets raises consumption generally by reducing the impulse to cave".[13] More specifically: a person who owns nothing or very little will exert himself greatly to acquire some reserve funds, while a person who owns much will have much smaller incentives to save. Similarly, incentives to increase one's income are said to weaken with the amount of income. In other words, the strength of motivation is inversely correlated with the level of achievement.

In view of the lack of contact between economists and psychologists, it is hardly surprising that economists failed to see the relevance for their postulates of the extensive experimental work performed by psychologists on the problem of levels of aspiration. It is not necessary in this paper to describe these studies in detail. It may suffice to formulate three generalizations as established in numerous studies of goal-striving behavior (see, for example, 12):

1. Aspirations are not static, they are not established once for all time.
2. Aspirations tend to grow with achievement and decline with failure.
3. Aspirations are influenced by the performance of other members of the group to which one belongs and by that of reference groups.

From these generalizations hypotheses were derived about the influence of assets on saving which differed from the postulates of the saturation theory. This is not the place to describe the extensive empirical work undertaken to test the hypotheses. But it may be reported that the saturation theory was not confirmed; the level-of-aspiration theory likewise did not suffice to explain the findings. In addition to the variable "size of liquid-asset holdings," the studies had to consider such variables as income level, income change, and savings habits. (Holders of large liquid assets are primarily people who have saved a high proportion of their income in the past!) [14]

The necessity of studying the interaction of a great number of variables

[13] The last quotation is from the publication of the U.S. Department of Commerce, *Survey of Current Business*, May 1950, p. 10. This quotation and several similar ones are discussed in 8 pp. 186 ff.

[14] The empirical work was part of the economic behavior program of the Survey Research Center under the direction of the author. See (8) and also (10) and (11).

and the change of choices over time leads to doubts regarding the universal validity of a one-dimensional ordering of all alternatives. The theory of measurement of utilities remains an empty frame unless people's established preferences of *A* over *B* and of *B* over *C* provide indications about their probable future behavior. Under what conditions do people's preferences give us such clues, and under what conditions do they not? If at different times *A* and *B* are seen in different contexts—because of changed external conditions or the acquisition of new experiences—we may have to distinguish among several dimensions.

The problem may be illustrated by an analogy. Classic economic theory postulates a one-dimensional ordering of all alternatives; Gallup assents that answers to questions of choice can always be ordered on a yes-uncertain (don't know)—no continuum; are both arguments subject to the same reservations? Specifically, if two persons give the same answer to a poll question (e.g., both say "Yes, I am for sending American troops to Europe" or "Yes, I am for the Taft-Hartley Act") may they mean different things so that their identical answers do not permit any conclusions about the similarity of their other attitudes and their behavior? Methodologically it follows from the last argument that yes-no questions need to be supplemented by open-ended questions to discern differences in people's level of information and motivation. It also follows that attitudes and preferences should be ascertained through a multi-question approach (or scaling) which serves to determine whether one or several dimensions prevail.

ON THEORY CONSTRUCTION

In attempting to summarize our conclusions about the respective merits of different scientific approaches, we might quote the conclusions of Arrow which he formulated for social science in general rather than for economics:

> To the extent that formal theoretical structures in the social sciences have not been based on the hypothesis of rational behavior, their postulates have been developed in a manner which we may term *ad hoc*. Such proposition... depend, of course on the investigator's intuition and common sense (**1**, p. 137).

The last sentence seems strange indeed. One may argue the other way around and point out that such propositions as "the purpose of business is to make profits" or "the best businessman is the one who maximizes profits" are based on intuition or supposed common sense, rather than on controlled observation. The main problem raised by the quotation concerns the function of empirical research. There exists an alternative to developing an axiomatic system into a full-fledged theoretical model in advance of testing the theory through observations. Controlled observa-

tions should be based on hypotheses, and the formulation of an integrated theory need not be delayed until all observations are completed. Yet theory construction is part of the process of hypothesis-observation-revised hypothesis and prediction-observation, and systematization should rely on some empirical research. The proximate aim of scientific research is a body of empirically-validated generalizations and not a theory that is valid under any and all circumstances.

The dictum that "theoretical structures in the social sciences must be based on the hypothesis of rational behavior" presupposes that it is established what rational behavior is. Yet, instead of establishing the characteristics of rational behavior a priori, we must first determine the conditions a_1, b_1, c_1 under which behavior of the type x_1, y_1, z_1 and the conditions a_2, b_2, c_2 under which behavior of the type x_2, y_2, z_2 is likely to occur. Then, if we wish, we may designate one of the forms of behavior as rational. The contributions of psychology to this process are not solely methodological; findings and principles about noneconomic behavior provide hypotheses for the study of economic behavior. Likewise, psychology can profit from the study of economic behavior because many aspects of behavior, and among them the problems of rationality, may be studied most fruitfully in the economic field.

This paper was meant to indicate some promising leads for a study of rationality, not to carry such study to its completion. Among the problems that were not considered adequately were the philosophical ones (rationality viewed as a value concept), the psychoanalytic ones (the relationships between rational and conscious, and between irrational and unconscious), and those relating to personality theory and the roots of rationality. The emphasis was placed here on the possibility and fruitfulness of studying forms of rational behavior, rather than the characteristics of *the* rational man. Motives and goals that change with and are adapted to circumstances, and the relatively rare but highly significant cases of our becoming aware of problems and attempting to solve them, were found to be related to behavior that may be called truly rational.

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6 / *Toward an Understanding of Human Behavior*

ERNEST DICHTER

Identification of motives as they relate to market behavior is an enormously complicated task because individual motives are intermingled with social forces. For this reason one must be not only concerned with the "whys" of individual behavior, but also with the "whys" of aggregate behavior, and hence with techniques that can be applied to aggregate as well as to individuals.

The search for these motivations involves the use of a great variety of techniques including those from statistics, psychology, economics, sociology, and other social sciences. In this article the author makes a strong case for the use of techniques drawn from the field of psychology to study market-behavior.

When advertiser, agency, and manufacturer turn to research, they really are interested in finding answers which will enable them to sell more of their particular brand of merchandise or service. Usually the manufacturer knows quite a few of the answers and has made quite a few correct moves. Had he not, he could not now afford the services of an agency or a research organization. It is remarkable, when listening to the discussions of the scientific aspects of marketing research and motivational research, how the greater number of the American industrialists could have had the audacity to introduce new products, change the models of their cars, develop new and successful radio and TV programs—in short, develop American industry at a most amazing rate merely on the basis of ingenuity, creativity, and intelligent hunches.

When the manufacturer turns to research, he does so because he looks upon it as one more tool to help him in his daily task of making decisions. Particularly, when he is attempting to reach and influence consumers, whether housewives or purchasing agents, he wants additional information about their behavior, which will permit him to make additional correct moves. He seeks information which will tell him:

1. Who buys his product and who does not.

SOURCE : From Robert Ferber and Hugh G. Wales (eds.), *Motivation and Market Behavior* (Homewood, Ill.: Richard D. Irwin, Inc., 1958), pp. 21-23. Adapted from a talk, "Scientifically Predicting and Understanding Human Behavior," given at the 1955 University of Illinois Marketing Symposium, and reprinted in *Consumer Behavior and Motivation* (Urbana, Ill. : University of Illinois Bureau of Economics and Business Research, 1957), Ernest Dichter : President, Institute of Motivational Research, Inc., Croton-on-Hudson, New York.

2. Who can be sold his product and who cannot.
3. Why people do or do not buy his product.
4. How he can reach more customers with his message most effectively and most economically.
5. What is the future of the market prediction of trends.

For many years the only tool available to the manufacturer was conventional statistical research. The advertiser has gradually come to realize that by using this tool alone he has received only part of the information which he requires to make an intelligent and scientifically based decision. His situation may be compared to that of the medical practitioner who wants to cure a stomach ailment and who has available only an accurate and detailed report on the number of sufferers from stomach ailments in this country, their age, income, diet, and marital status. Much of this information would be very interesting, but only in the most remote fashion would it help the physician to cure stomach ailments.

When the advertiser comes to the market researcher he is interested in finding data which permit him to act, and not academic analyses of the status quo. What does the commercial practitioner need for action data? He needs data of a dynamic nature which gives him an understanding and scientific proof of the real causes of human behavior in the market place.

This, then, is the real and inescapable hurdle which modern market research will have to overcome. No amount of vituperation and emotionality, no attempts to label as unscientific what does not fit in with conventional nomenclature or may not be expressed in decimal points, can replace a calm and truly scientific analysis of this real problem.

If we can, within the ranks of the broad family of researchers, begin to see that different problems require different research solutions, and that our problems, as researchers, *are* different in many crucial ways, then we shall be in a position at last to unite our band around a common scientific philosophy which nevertheless recognizes the utility of different approaches and tools.

No one involved in contemporary business research would deny the desirability of such a unifying development, least of all the consumers of that research, the businessmen themselves. The accusations and counter-accusations currently rampant in research circles represent more than the healthy, "competitive" claims and counterclaims of robust research organizations. Instead, they are signs of a dangerous confusion and unease—an unease which may very well be communicated to the ultimate consumer who simply will not know which (if any!) of these techniques to choose or reject.

The more we do, therefore, within our own family of researchers to dispel these confusions and doubts among our consumers and ourselves, the more

we advance our profession as a whole. It is true that the only kind of research "worth doing" is research that meets the most rigorous canons of scientific accuracy and honesty. But it is also true that science in general and statistics as its handmaiden, offers many different tools for the solution of the different problems of business research.

DESCRIPTIVE AND DIAGNOSTIC RESEARCH

Business generally has a choice of two types of research: descriptive research, which tells how many did what; and diagnostic research, which tells why what happened did happen. While there is an interrelationship between the two, it is motivational research that provides the tools for creative predictions of consumers' actions in the future and enables the executive to base his advertising and public relations decisions on the pattern of human motivations revealed in the research study.

Studying human motivations is not unlike Herodotus' problem of studying the reason for the inundation of the Nile. By merely observing a person's behavior it is close to impossible to determine why he does what he does. Herodotus approached his problem by picking out, on the basis of previous knowledge, certain elements which he thought were significant. He felt that the distance covered by the flowing waters, the time at which the inundation began, the time at which the overflow reached its maximum, and the fact that there were no winds or breezes at the river surface were all interesting phenomena, although he did not know what they had to do with each other. In this form they were all meaningless facts, not susceptible of interpretation. Why did he pick these facts rather than others? The answer is that he was familiar with certain theories dealing with the behavior of rivers. It was his familiarity with these theories that made him look to factors like wind, snowfall, or evaporation, rather than to the quantity of water or the chemical composition of the water in the Nile.

In the field of human motivations, we approach problems with certain general theories about why people behave as they do. For example, we believe that people are more concerned with their own egos than with other people; that most people suffer from a degree of insecurity and have as one of their main goals in life self-protection against dangers and anxiety. Applying this theory to a specific problem, we develop a hypothesis.

Cohen and Nagel[1] state:

> We cannot take a single step forward in any inquiry unless we begin with a suggested explanation or solution of the difficulty which originated it. Such tentative explanations as suggested to us by something in the subject matter and by our previous knowledge, when they are formulated as pro-

[1] M. R. Cohen and E. Nagel. *An Introduction to Logic and Scientific Method* (New York: Harcourt, Brace and Co., 1942).

positions, are called hypotheses. The function of a hypothesis is to direct our search for the order among facts. The suggestions formulated in the hypotheses may be the solutions to the problem.

THE PROBLEM OF CAUSALITY

From one point of view, motivational research deals with the difficult scientific problem of causation. In the conventional market research study, causation can seldom be established, partly because conventional market research must deal with isolated and principally numerical phenomena, and secondly, because most practitioners of marketing research are not trained to establish psychological relationships between data and behavior. When we say that motivational research is "why" research, we are saying precisely that the gap between the act and the psychometric evidence has been bridged. We are enabled, therefore, to say that this takes place because these things have happened. Causality does not imply a simple cause-and-effect relationship. As a matter of fact, it is because motivational research deals with the totality of factors influencing consumer behavior that we can establish causal relationships. It is the insight brought by this type of study to the businessman or advertising executive which permits him to use motivational research and immediately and effectively translate it. We do not attempt to provide in our studies a table of the frequency with which a particular causal relationship exists in the population as a whole. What we have attempted to establish is the significance of the causal relationship, and not necessarily the frequency of its occurrence. In establishing this causal relationship we bring to bear on the problem, not only findings in the individual study, but also the findings in all of our studies, plus the accumulated knowledge developed by the social sciences.

MULTIPLE FACTORS

It should be emphasized that relationship between cause and effect cannot be attributed to a single, simple, motivational factor. The real problem of motivational research is to analyze, and identify, the variety of interrelated factors which culminate in a particular action. This cannot be done by a simple analysis of the frequency of behavior or the frequency of a typical stylized response to a direct question. The very complexity of human motivations requires the broadest approach to their analysis combined with a rigorous multiple validation which defines and isolates the individual factors.

MOTIVATIONAL RESEARCH IS QUASI-EXPERIMENTAL

Experiments in the laboratory sciences are designed to establish the relationship between variables in a controlled and usually quite isolated

corner of the universe. Usually this corner (the laboratory plus the experimental materials) is most atypical of the universe as a whole. For a physicist wishing to test the magnetism of certain types of steel, there is no question of representativeness: there is no "sampling problem". Why?

Well, for one thing, a "random sample of pieces of steel" would be a most cluttered and disorderly collection of odds and ends, and utterly useless for his purposes, not to mention the fact that it would be fabulously expensive to obtain. What *does* he want, then? He wants good examples as free of impurities as possible, of the several types of steel about which he has erected hypotheses. How does he get them? He defines his types and then goes out and gets "good" (that is to say, measurably not a typical) samples of each type.

Now suppose that one of these types is just as frequent in the real world as all of the other types put together. Does he arrange his sample so that half of the steel pieces are of this type? He does not; it would be foolish and it would certainly blur his results. For the scientific fact is that the rare types are probably more important in his analysis than the common ones.

In applying this general rationale to motivational research, we may, for example, use anywhere from forty to fifty case histories taken from our consumer motivation panel, where we know not only how the individuals behave, but what their histories have been within the normal realms of family and community background. These preliminary steps help to produce a series of meaningful hypotheses which are weighed and checked against all the accumulated knowledge in the field of human motivations. Not unlike a good diagnostician or a detective with many years of experience, we can set forth tentative explanations of why a particular event has taken place.

PSYCHOLOGICAL VARIABLES

In defining our approach to a problem, we seek to establish the major psychological variables which may influence the findings. In a sense, this is an aspect of the development of hypotheses. What we are searching for are psychological and personality elements which may have a dynamic effect on consumers' attitudes toward a product. Such variations will often cut across income, educational, and professional lines. In doing so, we not only take into account such factors as use, nonuse, and frequency of use, but all of the psychological variations which affect the problem.

For example, in a recent study, we established the fact that the consumer may be divided into two groups in terms of his attitudes toward milk. One of these groups was the "milk-involved"; the other was "milk-noninvolved". These were two of the important psychological variables which had a definite relationship to attitudes and feelings toward evaporated milk. It was by developing this psychological variation that our study findings

gained real significance. The analysis of these variables is of extreme importance in understanding the real responses of the population to particular situations. Such factors as adventurousness, insecurity, prejudice, self-indulgence, and so on are often of more significance in determining market responses than such objective factors as income, age, and so forth.

MULTIPLE VALIDATION

The second step of our task is to verify or refute, exclude or reformulate these tentative explanations, and to study them and their varied ramifications. A number of avenues are open for implementing this step, the rigorous statistical testing of our hypotheses. We can conduct depth interviews and do observational studies noting the actual behavior of people. We set up trigger systems of circumstantial evidence, stating that if Hypothesis A is correct, Events 1, 2, 3, 4, and 5 should occur in a particular manner. Then we go out into the field to see if these events do indeed occur and conclude thereby with adequate scientific justification whether Hypothesis A was correct or incorrect.

This second step, the verification or refutation of our hypotheses based on approximately 200 or 250 individual histories, still does not lead to the same kind of variety and numerical accuracy, as for example, ability to distinguish between a brand-recognition index of 68 per cent or 73 per cent, that 2,000 or 5,000 interviews would do. What we have contributed, however, is a really thorough understanding of a basic motivational pattern among a group of people large enough to indicate that the pattern is significant and lends itself to practical applications. In finding that 80 mothers out of 100 reveal, in multiple waves and multiple tests, when talking about food for their babies, that they are as concerned about their own convenience as they are about the nutritional value of the food, we have a finding valid enough to permit any practitioner in advertising or public relations to take advantage of it and act accordingly.

Using various research techniques to test a hypothesis permits multiple and structural validation. A central theory may have a number of subsidiary hypotheses, each of which points to a different corner of the phenomenal world. So, armed with a number of small samples, each of the most efficient size possible, we go out and look in these corners. We use field tests, projective tests, interviewer-administered questionnaires, all kinds of measures—each applied to its own distinct sample of respondents. Then, if supporting tendencies are found in each separate pile of results, we have something much more reliable, scientifically, than one massive sample could have produced.

BASIC MOTIVATIONAL RESEARCH TOOLS

Motivational research employs a gamut of tools, from simple word-

association tests to complex and detailed projective techniques. In all, the basic aim of these various procedures is to develop sufficient information to distinguish rationalization from reason.

The two most important techniques employed by our organization are the depth interview and the projective technique. The depth interview has been much discussed.[2] It is employed to elicit the freest possible associations on the part of the respondent. The respondent himself, for the most part, determines the direction, the order, and the content of the interview. The interviewer must be skilled at developing rapport, inducing the respondent to express himself, and inserting delicate probes, where necessary, to encourage fuller discussion. Scientifically speaking, the depth interview begins at the point where the open-end question used by some conventional research organizations ends. It avoids the interruption of rapport involved in following a set procedure. Instead, by giving the respondent an opportunity to talk about himself, listening sympathetically, and encouraging further self-exploration, the closest kind of rapport can be developed in the course of depth interviewing procedure. The mass of information accumulated by the depth interviewing technique is analyzed for the purpose of determining the *meaning* of the consumer's behavior rather than relying strictly upon her own explanation. In this area, we bring to bear the specialization of the members of our staff in the various branches of the social sciences.

The projective technique is basically a method of inducing the respondent to talk about herself in a disguised form. Where, for example, we may be encountering motivational patterns which are socially unacceptable, the projective technique, in which the respondent interprets a deliberately vague story, photograph, drawing, or design, permits her to attribute her own motives, without feelings of guilt, to some third party. It also permits her to express feelings about the external, which she may not know about herself, yet which are extremely revealing of her own attitudes.

Whenever it is desired and practical, there is no reason why such a pattern cannot be tested on the basis of 5,000 cases. In practice, however, at the end of a study a client will much more frequently accept our recommendation, if it provides him with new insight into his sales and advertising problems.

WHEN ARE MOTIVATIONAL TECHNIQUES SCIENTIFICALLY CORRECT?

The use of motivational research techniques is not just a matter of voluntary decision. There are definite circumstances when motivational

[2] For a clear-cut explanation of the basic approach taken by the depth interview, and the ways in which our organization uses it, see Robert K. Merton, *Mass Persuasion* (New York: Harper and Brothers, 1964).

research techniques are the *only* ones which will produce meaningful results. The use of conventional market research techniques, under these specified circumstances, may be unscientific and misleading.

What are the circumstances in which motivational techniques and projective techniques are indispensable?

1. Whenever the data being sought may not be present at the rational or conscious level.
2. Whenever we are dealing with psychological mechanisms and not with simple static cause-and-effect relationships.
3. Whenever the respondent has a chance to produce interference consciously or unconsciously between the time he understands the question and the time he answers it.

Human motivations are frequently unconscious and represent inter-twined and complicated mechanisms. Modern psychiatry and all other social sciences could not exist without the acceptance of this fact. To explain this position, the really trained modern social scientist with thorough clinical knowledge finds himself in the same position as the researcher who attempts to convince the patient who "is sure he knows what causes his stomach disorders" of the existence of invisible microbes or of mysterious cells which suddenly start growing beyond their intended size and function. It is as difficult for some of us to accept the existence of the often exasperatingly irrational aspects of modern psychoanalytic and social psychological concepts as it may be for the unsophisticated layman to accept the doctor's statement that the headache you complain about really comes from an infection between your toes.

Those criticisms which contend that most social science concepts are contradictory and that no two psychologists can agree between themselves about the interpretation of an observation are of a similar nature. It is true that three doctors might interpret an X-ray differently. This does not prove that there are not ever-growing areas of agreement in the medical and biological sciences and that we should stop sponsoring a cancer institute.

In a recent book, *Psychoanalysis as Science*,[1] a group of scientists set it as their task to establish whether or not psychoanalytic explanations of human behavior could be proven by rigorous experiments. A reading of these experiments is highly recommended.

If the existence of unconscious motivations and their basically dynamic and complex nature is accepted, we have come much closer to answering the question of which research techniques are correct, necessary, and desirable and which ones are not.

It is my view, based upon studies and experiments, as well as the mass

[1] E. Pumpian-Mindlin, ed., *Psychoanalysis as Science* (Stanford: Stanford University Press, 1952).

of psychological scientific literature, that whenever we deal with human motivations, direct questions are not only inadequate, but unscientific and therefore are to be rejected.

The systematic elements of my argument are the following:

1. *Each individual represents a motivational universe.* In order to be able to record scientifically how a population is motivated in respect to a specific phenomenon, we must first fully understand why each individual, as a member of this group, behaves in the way he does. Unless we have arrived at such understanding, no meaningful statement about the motivations of the group can be made. In other words, we have to be clear at the end of a motivational interview why Mrs. Brown buys a particular brand of coffee. This evidence may include a wide variety of contributing factors.

2. *Direct questioning erroneously presupposes objective insight.* "Know thyself" is one of the oldest goals set for the individual. We have come closer to it, but we are still far from achieving this goal. Whenever we are asked why we did what we did, we must analyze our actions and give a correct and insightful answer, often within the limit of a few minutes. Even if no unconscious factors are at work, we are often incapable of choosing, from among the various conflicting motivations of which we may be aware, the one which influenced the resulting action.

3. *Rational explanations and rationalizations.* The human personality does not represent a passive observational field. You cannot simply consider a question as an objective means of discovering what goes on in the consumer's mind. Whenever a question is being asked, an active interpersonal process is instituted. An interviewer or a printed form challenges me, as an objective outsider, to give an account of myself.

Psychology has demonstrated that there are several permanent distortion factors which interfere with the objective observation of the motivational field. The most important one is our desire to appear rational to ourselves and to others. When confronted with an investigation of our motives, we first search actively for rational explanations. The danger is great, however, that this desire to act rationally results in a rationalized answer, a pseudo-rational cause for our behavior.

THE CONCEPT OF "UNIFIED" RESEARCH

Of course motivational research is not a panacea. There is good and bad motivational market research, just as there is good and bad conventional market research. What is needed is a unified concept in research, dealing with the behavior and motives of human beings.

When the advertiser wants to be able to predict the outcome of his actions and asks for help, he is asking for motivational answers. If the advertiser is satisfied with knowing that most people will drink tea when

they are ill, that more people have one car than two cars, use one brand of cereal, or listen to a particular radio or TV show, then the techniques utilized to approximate census figures should be fully satisfactory to him. If the advertiser, however, is not satisfied with finding where his sales are good and where they are bad, but wants to bring about changes, wants to sell a second car to the family, make them buy his brand of cereal, and listen to his TV show, he is invading the field of social sciences and particularly the field of the psychological disciplines, whether he realises it or not.

The moment you are dealing with human beings, their opinions and their emotions, you are in the field of psychology. It is only too true that the social sciences are far from perfect. But this is a complaint that all of us have to live with whether we employ conventional market research or motivational market research.

There is no doubt that motivational market research needs discipline. But it has to be the discipline appropriate to its specific nature as a science. To insist that, because you have to research 2,000 people to know how many people have stomach disorders at a given time, any scientifically proven explanation of the real causes of stomach disorder based on experimentation and an entirely different set of inductive and deductive inferences is invalid, is in itself proof of lack of scientific discipline of a much wider consequence.

Prediction of consumer behavior necessitates first understanding of his behavior today. As an individual reacting, and at the same time influencing the world within which he lives, the motivational researcher is at the same time a participant and a shaper of the future world.

7 / *Motivation, Cognition, Learning— Basic Factors In Consumer Behavior*

JAMES A. BAYTON

Various aspects of motivation, cognition and learning can be used to explain consumer behavior. The author discusses such concepts as ego-involvement, "true" versus rationalized motives, need arousal, the ego-superego concept, reinforcement, and habit. All of these are treated from the point-of-view of the marketing executive who is interested in improving the efficiency of his firm's marketing efforts.

The analysis of consumer behavior presented here is derived from diverse concepts of several schools of psychology—from psychoanalysis to reinforcement theory.

Human behavior can be grouped into three categories—motivation, cognition, and learning. Motivation refers to the drives, urges, wishes, or desires which initiate the sequence of events known as "behavior". Cognition is the area in which all of the mental phenomena (perception, memory, judging, thinking, etc.) are grouped. Learning refers to those changes in behavior which occur through time relative to external stimulus conditions.

Each broad area is pertinent to particular problems of consumer behavior. All three together are pertinent to a comprehensive understanding of consumer behavior.

MOTIVATION

Human Needs

Behavior is initiated through needs. Some psychologists claim that words such as "motives", "needs", "urges", "wishes", and "drives" should not be used as synonyms; others are content to use them interchangeably. There is one virtue in the term "drive" in that it carries the connotation of a force pushing the individual into action.

Motivation arises out of tension-systems which create a state of disequilibrium for the individual. This triggers a sequence of psychological events directed toward the selection of a goal which the individual *anticipates* will bring about release from the tensions and the selection of patterns of action which he *anticipates* will bring him to the goal.

One problem in motivation theory is deriving a basic list of the human

SOURCE : From *Journal of Marketing*, national quarterly publication of the American Marketing Association, vol. 22, January 1958, pp. 282-289. James A Bayton : Projects Manager, National Analysts, Inc.

needs. Psychologists agree that needs fall into two general categories—those arising from tension-systems physiological in nature (biogenic needs such as hunger, thirst, and sex), and those based upon tension-systems existing in the individual's subjective psychological state and in his relation with others (psychogenic needs).

Although there is not much disagreement as to the list of specific biogenic needs, there is considerable difference of opinion as to the list of specific psychogenic needs. However, the various lists of psychogenic needs can be grouped into three broad categories:

(1) *Affectional needs*—the needs to form and maintain warm, harmonious, and emotionally satisfying relations with others.

(2) *Ego-bolstering needs*—the needs to enhance or promote the personality; to achieve; to gain prestige and recognition; to satisfy the ego through domination of others.

(3) *Ego-defensive needs*—the needs to protect the personality; to avoid physical and psychological harm; to avoid ridicule and "loss of face"; to prevent loss of prestige; to avoid or to obtain relief from anxiety.

One pitfall in the analysis of motivation is the assumption that a particular situation involves just one specific need. In most instances the individual is driven by a combination of needs. It seems likely that "love" brings into play a combination of affectional, ego-bolstering, and ego-defensive needs as well as biogenic needs. Within the combination some needs will be relatively strong, others relatively weak. The strongest need within the combination can be called the "prepotent" need. A given consumer product can be defined in terms of the specific need-combination involved and the relative strengths of these needs.

Another pitfall is the assumption that identical behavior have identical motivational backgrounds. This pitfall is present whether we are thinking of two different individuals or the same individual at two different points in time. John and Harry can be different in the motivational patterns leading to the purchase of their suits. Each could have one motivational pattern influencing such a purchase at age twenty and another at age forty.

Ego-Involvement

One important dimension of motivation is the degree of ego-involvement. The various specific need-patterns are not equal in significance to the individual. Some are superficial in meaning; others represent (for the individual) tremendous challenges to the very essence of existence. There is some evidence that one of the positive correlates of degree of ego-involvement is the amount of cognitive activity (judging, thinking, etc.) involved. This means that consumer goods which tap low degrees of ego-involvement will be purchased with a relatively lower degree of conscious decision-making

activity than goods which tap higher degrees of ego-involvement. Such a factor must be considered when decisions are made on advertising and marketing tactics.

At times the ego-involvement factor is a source of conflict between client and researcher. This can occur when research reveals that the product taps a low degree of ego-involvement within consumers. The result is difficult for a client to accept; because *he* is ego-involved and, therefore, cognitively active about his product, consumers must certainly be also. It is hard for such a client to believe that consumers simply do not engage in a great deal of cognitive activity when they make purchases within his product class. One way to ease this particular client-researcher conflict would be for the researcher to point out this implication of the ego-involvement dimension.

"True" and Rationalized Motives

A particular difficulty in the study of motivation is the possibility that there can be a difference between "true" motives and rationalized motives. Individuals sometimes are unaware of the exact nature of drives initiating their behavior patterns. When this occurs, they attempt to account for their behavior through "rationalization" by assigning motivations to their behavior which are acceptable to their personality structures. They may do this with no awareness that they are rationalizing. There can be other instances, however, in which individuals are keenly aware of their motivations, but feel it would be harmful or socially unacceptable to reveal them. When this is the case, they deliberately conceal their motivations.

These possibilities create a problem for the researcher. Must he assume that every behavior pattern is based upon unconscious motivation? If not, what criteria are to be used in deciding whether to be alert to unconscious motivation for this behavior pattern and not that one? What is the relative importance of unconscious motives, if present, and rationalized motives? Should rationalized motives be ignored? After all, rationalized motives have a certain validity for the individual—they are the "real" motives insofar as he is aware of the situation.

The situation is even more complicated than this—what about the dissembler? When the individual actually is dissembling, the researcher must attempt to determine the true motives. But, how shall we determine whether we are faced with a situation where the respondent is rationalizing or dissembling? In a given case, did a projective technique reveal an unconscious motive or the true motive of a dissembler? Conceptually, rationalized motives and dissembled motives are not equal in psychological implication; but it is rare, if ever, that one finds attempts to segregate the two in consumer research directed toward the analysis of motivation. This failure is understandable, to some extent, because of the lack of valid criteria upon which to base the distinction.

COGNITION

Need-Arousal

Motivation, thus, refers to a state of need-arousal—a condition exerting "push" on the individual to engage in those activities which he anticipates will have the highest probability of bringing him gratification of a particular need-pattern. Whether gratification actually will be attained or not is a matter of future events. Central to the psychological activities which now must be considered in the sequence are the complex of "mental" operations and forces known as the cognitive processes. We can view these cognitive processes as being *purposive* in that they serve the individual in his attempts to achieve satisfaction of his needs. These cognitive processes are *regulatory* in that they determine in large measure the direction and particular steps taken in his attempt to attain satisfaction of the initiating needs.

The Ego-Superego Concept

The ego-superego concept is pertinent to a discussion of cognitive activities which have been triggered by needs. Discussions of the ego-superego concept usually come under the heading of motivation as an aspect of personality. It is our feeling that motivation and the consequences of motivation should be kept systematically "clean". In the broadest sense, ego and superego are mental entities in that they involve memory, perceiving, judging, and thinking.

The Ego. The ego is the "executive", determining how the individual shall seek satisfaction of his needs. Through perception, memory, judging, and thinking the ego attempts to integrate the needs, on the one hand, and the conditions of the external world, on the other, in such manner that needs can be satisfied without danger or harm to the individual. Often this means that gratification must be postponed until a situation has developed, or has been encountered, which does not contain harm or danger. The turnpike driver who does not exceed the speed limit because he sees signs saying there are radar checks is under the influence of the ego. So is the driver who sees no cars on a straight stretch and takes the opportunity to drive at excessive speed.

The Superego. The superego involves the ego-ideal and conscience. The ego-ideal represents the positive standards of ethical and moral conduct the individual has developed for himself. Conscience is, in a sense, the "judge", evaluating the ethics and morality of behavior and, through guilt-feelings, administering punishment when these are violated. If a driver obeys the speed limit because he would feel guilty in doing otherwise, he is under the influence of the superego. (The first driver above is under the influence of the ego because he is avoiding a fine, not guilt feelings.)

Specific Examples

Credit is a form of economic behavior based to some extent upon ego-

superego considerations. It is generally felt that one cause of consumer-credit expansion has been a shift away from the superego's role in attitudes toward credit. The past ego-ideal was to build savings; debt was immoral —something to feel guilty about, to avoid, to hide. These two superego influences restrained the use of credit. For some cultural reason, credit and debt have shifted away from superego dominance and are now more under the control of the ego—the primary concern now seems to be how much of it can be used without risking financial danger.

The purchasing of specific consumer goods can be considered from the point of view of these two influences. Certain goods (necessities, perhaps) carry little superego influence, and the individual is psychologically free to try to maximize the probability of obtaining satisfaction of his needs while minimizing the probability of encountering harm in so doing. Other goods, however, tap the superego. When a product represents an aspect of the ego-ideal there is a strong positive force to possess it. Conversely, when a product involves violation of the conscience, a strong negative force is generated against its purchase.

Let us assume that, when the need-push asserts itself, a variety of goal-objects come into awareness as potential sources of gratification. In consumer behavior these goal-objects may be different brand names. The fact that a particular set of goal-objects come into awareness indicates the generic character of this stage in the cognitive process—a class of goal-objects is seen as containing the possible satisfier. What the class of goal-objects and the specific goal-objects within the class "promise" in terms of gratification are known as "expectations".

There are, then, two orders of expectation: generic expectancies, and object-expectancies. Suppose the needs were such that the individual "thought" of brands of frozen orange juice. Some of the generic expectations for frozen orange juice are a certain taste, quality, source of vitamin C, protection against colds, and ease of preparation. The particular brands carry expectations specifically associated with one brand as against another. The expectation might be that brand A has a more refreshing taste than brand B.

In many instances, cognitive competition occurs between two or more generic categories before it does between goal-objects within a generic category. Much consumer-behavior research is directed toward the investigation of generic categories—tires, automobiles, appliances, etc. But perhaps not enough attention has been given to the psychological analysis of cognitive competition between generic categories. An example of a problem being studied is the competition between television viewing, movie going and magazine reading. For a particular producer, cognitive competition within the pertinent generic category is usually of more concern than cognitive competition between his generic category and other. The producer

usually wants only an intensive analysis of consumer psychology with respect to the particular generic category of which his product is a member.

Let us now assume that under need-push four alternative goal-objects (brands A, B, C, and D) came into awareness. Why these particular brands and not others? Why are brands E and F absent? An obvious reason for brand E's absence might be that the individual had never been exposed to the fact that brand E exists. He had been exposed to brand F, however. Why is it absent? The problem here is one of memory—a key cognitive process. The producers of brands E and F obviously are faced with different problems.

Two sets of circumstances contain the independent variables that determine whether a given item will be remembered. One is the nature of the experience resulting from actual consumption or utilization of the goal-object. This will be discussed later when we come to the reinforcement theory of learning. The other is the circumstances present on what might be called vicarious exposures to the goal-object—vicarious in that at the time of exposure actual consumption or utilization of the goal-object does not occur. The most obvious example would be an advertisement of the goal-object. Of course, the essential purpose of an advertisement is to expose the individual to the goal-object in such a manner that at some subsequent time it will be remembered readily. The search for the most effective methods of doing this by manipulation of the physical aspects of the advertisement and the appeals used in it is a continuing effort in consumer-behavior research. Finally, for many consumers these two sets of circumstances will be jointly operative. Experiences with the goal-object and subsequent vicarious exposures can coalesce to heighten the memory potential for an item.

Making a Choice

With, say, four brands in awareness, the individual must now make a choice. What psychological factors underlie this choice? The four brands could be in awareness due to the memory factor because they are immediately present in the environment; or some because they are in the environment, and the others because of memory.

The first problem is the extent to which the items are differentiated. The various goal-objects have attributes which permit the individual to differentiate between them. The brand name is one attribute; package another; design still another. These differentiating attributes (from the point of view of the consumer's perceptions) can be called signs or cues. All such signs are not equally important in consumer decisions. Certain of them are depended upon much more than others. For example, in a study of how housewives select fresh oranges, the critical or key signs were thickness of skin, color of skin, firmness of the orange, and presence or absence of "spots" on the skin.

The signs have expectancies associated with them. Package (a sign) can carry the expectancy of quality. Thin-skin oranges carry the expectancy of juice; spots carry the expectancy of poor taste quality and insufficient amount of juice. Often sign-expectancies determined through consumer research are irrelevant or invalid. Signs are irrelevant when they do not represent a critical differentiating attribute of a goal-object. Certain discolorations on oranges have nothing to do with their intrinsic quality. Expectancies are invalid when they refer to qualities that do not in fact exist in association with a particular sign.

The different goal-objects in awareness can be assessed in terms of the extent to which they arouse similar expectancies. This phenomenon of similarity of expectations within a set of different goal-objects is known as generalization. One goal-object (brand A, perhaps), because of its associated expectancies, can be assumed to have maximum appeal within the set of alternative goal-objects. The alternates then can be ordered in terms of how their associated expectancies approximate those of brand A. Is this ordering and the psychological distances between the items of the nature of:

Brand A Brand B	Brand A
or	
Brand C	Brand B Brand C

These differences in ordering and psychological distance are referred to as generalization gradients. In the first case, the expectancies associated with brand B are quite similar to those for brand A, but are not quite as powerful in appeal. Brand C has relatively little of this. In the second case, the generalization gradient is of a different form, showing that brand B offers relatively little psychological competition to brand A. (There will also be generalization gradients with respect to cognitive competition between generic categories.) In addition to the individual producer being concerned about the memory potential of his particular brand, he needs to determine the nature of the generalization gradient for his product and the products of his competitors. Mere ordering is not enough—the "psychological distances" between positions must be determined, also, and the factor determining these distances is similarity of expectancy.

The discussion above was concerned with cognitive processes as they relate to mental representation of goal-objects under the instigation of need-arousal. The items brought into awareness, the differentiating sign-expectancies, and the generalization gradient are the central factors in the particular cognitive field aroused under a given "need-push". One important dimension has not yet been mentioned—instrumental acts. These are acts necessary in obtaining the goal-object and the acts involved in consum-

ing or utilizing it. Examples are: "going downtown" to get to a department store, squeezing the orange to get its juice, ease of entry into service stations, and the operations involved in do-it-yourself house painting.

Instrumental acts can have positive or negative value for the individual. One who makes fewer shopping trips to down-town stores because of traffic and parking conditions displays an instrumental act with negative value. Frozen foods are products for which much of the appeal lies in the area of instrumental acts. The development of automatic transmissions and of power-steering in automobiles are examples of product changes concerned with instrumental acts. The point is that concentration upon cognitive reactions to the goal-object, *per se*, could be masking critical aspects of the situation based upon cognitive reactions to the instrumental acts involved in obtaining or utilizing the goal-object.

LEARNING

Goal-Object

Starting with need-arousal, continuing under the influence of cognitive processes, and engaging in the necessary action, the individual arrives at consumption or utilization of a goal-object. Using our consumer-behavior illustration, let us say that the consumer bought brand A and is now in the process of consuming or utilizing it. We have now arrived at one of the most critical aspects of the entire psychological sequence. It is with use of the goal-object that degree of gratification of the initial needs will occur.

Reinforcement

When consumption or utilization of the goal-object leads to gratification of the initiating needs there is "reinforcement". If at some later date the same needs are aroused, the individual will tend to repeat the process of selecting and getting to the same goal-object. If brand A yields a high-degree of gratification, then at some subsequent time, when the same needs arise, the consumer will have an increased tendency to select brand A once again. Each succeeding time that brand A brings gratification, further reinforcement occurs, thus further increasing the likelihood that in the future, with the given needs, brand A will be selected.

This type of behavior change—increasing likelihood that an act will be repeated—is learning; and reinforcement is necessary for learning to take place. Continued reinforcement will influence the cognitive processes. Memory of the goal-object will be increasingly enhanced; particular sign-expectancies will be more and more firmly established; and the generalization gradient will be changed in that the psychological distance on this gradient between brand A and the competing brand will be increased.

Habit

One of the most important consequences of continued reinforcement is the influence this has on the extent to which cognitive processes enter the picture at the times of subsequent need-arousal. With continued reinforcement, the amount of cognitive activity decreases; the individual engages less and less in decision-making mental activities. This can continue until, upon need-arousal, the goal-obtaining activities are practically automatic. At this stage there is a habit.

Note this use of the term "habit". One frequently hears that a person does certain things by "*force* of habit", that habit is an initiator of behavioral sequences. Actually habits are not initiating forces in themselves; habits are repeated response patterns accompanied by a minimum of cognitive activity. There must be some condition of need-arousal before the habit-type response occurs. This has serious implications in the field of consumer behavior. The promotional and marketing problems faced by a competitor of brand A will be of one type if purchase behavior for brand A is habitual, of another if this is not true. If the purchase is largely a habit, there is little cognitive activity available for the competitor to "work on".

Frequency of repeating a response is not a valid criterion for determining whether or not a habit exists. An act repeated once a week can be just as much a habit as one repeated several times a day. The frequency of a response is but an index of the frequency with which the particular need-patterns are aroused. Frequency of response also is often used as a measure of the *strength* of a habit. The test of the strength of a habit is the extent to which an individual will persist in an act after it has ceased providing need gratification. The greater this persistence, the stronger was the habit in the first place.

PROBLEM—CONCEPT—RESEARCH

The above views integrate concepts in contemporary psychology which seem necessary for a comprehensive explanation of human behavior, and apply these concepts to the analysis of consumer behavior. Each psychological process touched upon contains areas for further analysis and specification.

Some type of comprehensive theory of human behavior is necessary as a *working tool* to avoid a lack of discipline in attacking problems in consumer behavior. Too frequently a client with a practical problem approaches a researcher with an indication that all that is needed is a certain methodology —depth interviewing, scaling, or projective devices, for example.

The first step should be to take the practical problem and translate it into its pertinent conceptual entities. This phase of the problem raises the question of motivations. Here is a question involving relevance and validity of sign-expectancies. There is a question dealing with a generalization gradient,

etc. Once the pertinent conceptual entities have been identified, and only then, we arrive at the stage of hypothesis formulation. Within each conceptual entity, a relationship between independent and dependent variables is established as a hypothesis to be tested.

Often the relation between conceptual entities must be investigated. For example, what is the effect of continuing reinforcement on a specific generalization gradient? Within the same research project, one psychological entity can be a dependent variable at one phase of the research and an independent variable at another. At one time we might be concerned with establishing the factors associated with differential memory of sign-expectancies. At another time we could be concerned with the influence of remembered sign-expectancies upon subsequent purchase-behavior.

Discipline requires that one turn to methodology only when the pertinent conceptual entities have been identified and the relationships between independent and dependent variables have been expressed in the form of hypotheses. Fundamentally this sequence in the analysis of a problem serves to delimit the methodological possibilities. In any event, the methodologies demanded are those which will produce unambiguous tests of each particular hypothesis put forth. Finally, the results must be translated into the terms of the original practical problem.

We have used the term "discipline" in this phase of our discussion. The researcher must discipline himself to follow the above steps. Some find this a difficult thing to do and inevitably their data become ambiguous. They must resort to improvisation in order to make sense of the result *after* the project is completed. A research project is truly a work of art when the conceptual analysis, the determination of the hypotheses, and the methodologies have been developed in such an "air-tight" sequence that practically all that is necessary is to let the facts speak for themselves.

8/New Dimension in Consumer Analysis

HARPER W. BOYD, JR. AND SIDNEY J. LEVY

In order to insure that customers' needs and wants are specified in meaningful detail marketers must think and make decisions in terms of consumption systems in which their products play only a part. Knowledge of the steps involved in such a system should prove of considerable value in helping a firm to innovate as well as do a more effective job in connection with its basic marketing strategies.

In recent years there has been an outpouring of management literature dealing with a subject which has become known as "the marketing concept".[1] This line of thinking has been well summarized by Peter F. Drucker:

"If we want to know what a business is we have to start with its purpose. And its purpose must lie outside of the business itself. In fact, it must lie in society, since a business enterprise is an organ of society. There is only one valid definition of business purpose: to create a customer".[2]

A logical starting point, under this approach, is to concentrate on the *functions* that the product serves in satisfying a customer's needs instead of becoming preoccupied with the physical aspects of the product itself. Phrased in terms of functions, companies sell such things as transportation, nutrition, energy, comfort, self-expression, escape, intellectual development, and conformity; rather than cars, bread, oil, pillows, pens, novels, textbooks, and uniforms.

Certainly, this is a good start. By taking such a conceptual approach, many companies have sharpened their marketing effort by (a) researching and analyzing why customers (or potential customers) buy (or don't buy)

[1] See, for example, Theodore Levitt, "Marketing Myopia", HBR July-August 1960, p. 56; Fred J. Borch, "The Marketing Philosophy as a Way of Business Life", American Management Association Inc., Marketing Series No. 99, 1957; and J. B. Mckitterick, "What is the Marketing Management Concept?" *The Frontiers of Marketing Thought and Science* (Chicago, The American Marketing Association, 1957), pp. 71-82.

[2] *The Practice of Management* (New York, Harper & Brothers, 1954), p. 37.

SOURCE : From *Harvard Business Review*, vol. 41, November-December, 1963, pp. 129-140. Harper W. Boyd, Jr. : Professor of Marketing, Stanford University
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particular kinds of products or services, and (b) surveying and identifying particular groups of customers (or potential customers) who differ from one another in why they buy (or don't buy) the products or services in question. Many of the same companies have also used the marketing concept to instill more sense of direction in the non-marketing functions of the business and to unify their over-all organizational effort.

FOR FULL EFFECTIVENESS

But general adoption of a customer orientation is not enough. Such an approach can still fall short of full effectiveness. The trouble is that it does not *ensure* that customers' needs and wants will be understood and spelled out in the comprehensive, meaningful detail that they could and should be.

It is the purpose of this article to point out the value of thinking and making decisions in terms of *consumption systems.* This, we will show, is an effective way to avoid use of generalizations or unrelated specifics, and of achieving more innovation, greater market penetration, and more coordinated planning of the total marketing (and corporate) effort.

By the term *consumption system* we mean the way a purchaser of a product performs the total task of whatever it is that he or she is trying to accomplish when using the product—not baking a cake, but preparing a meal; not installing a transmission, but building an automobile.

There are at least three layers of increasingly greater depth in the analysis of customers for full marketing effectiveness:

(1) *Looking beyond purchase behavior to use behavior.* Whatever reasons people have for buying (or not buying) a particular product are clearly rooted in how they use that product; and how well it serves the use to which they put it becomes particularly important at times of repurchase. Here focusing on the consumption system, though this is broader than the use of the particular product, does ensure that the use behavior of the consumer will not be overlooked since it has to be included as part of the consumption system.

(2) *Deliberately studying the total consumption system for the sake of additional insights.* The use behavior for a particular product is bound to be affected not only by the problem to be solved or the task to be performed by the use of that product but also by the related products and related use behaviors that make up the *total* consumption system in which it plays a part; and these effects are subject to marketing applications.

(3) *Analyzing the consumption system in the further detail of the many interrelated subsystems resulting from different kinds of people making different use of the same product or the same use of different products.* Here we can combine market segmentation with consumer motivation for maximum effectiveness. Because these different subsystems reflect the different goals that people have in using products to solve their problems or

perform their tasks, it is possible to pinpoint marketing action to each individual subsystem and/or to reassemble such individual marketing actions into a coordinated master strategy.

Let us now look at these three layers of successively greater depth in more detail. As we shall see, many marketers already look at use behavior, and a number study the consumption system (sometimes without labeling it as such, sometimes in the narrower version of "behavior patterns"); but there are very few, if any, who carry their analysis to the ultimate step of interrelated subsystems.

Use Behavior

Many companies are sophisticated enough to realize that purchases are made not for the sake of the product but of the product's functions—that is, what the product will do in satisfying needs and wants. But unless they actually think in terms of *how* the consumer is using the product, they may slip into the error of taking product-oriented action. And one way of making use orientation inescapable is to think in terms of the consumption system in which the product plays a part. Thus:

A manufacturer of wrist-watches will recognize that he is serving people's needs to know what time it is. Yet he might still concentrate on making his watch simply a better timekeeper for the money, and pay major attention to the accuracy and dependability that lead people to buy or not buy his particular brand or model.

But the customers' need for such features depends, in turn, on the use to which they put watches in actual practice. First of all, what is the problem to be solved or the task to be performed: the scheduling of events, the organization of individual effort, the synchronization of related activities, the meeting of social obligations, or what? Secondly, what other products or services do people use to solve their time problem (e.g. clocks, bells, telephones, other people's actions or statements); and what are the circumstances (light, physical position, degree of hurry, presence of others, nearness of clocks, and so on)? It could turn out, for example, that for most people it is *more* important to be able to read the time quickly and clearly than to have it actually measured to the precise second. In any event, understanding the use behaviors of watch wearers *forces* attention on the product features and selling appeals that will lead to more effective marketing.

Total System

However, if marketers only look at the use behavior for their particular product or service, and do not go on to wring the full meaning out of the way that product fits into the total consumption system representing the wider problem or task which it is being used to solve or perform, they still may miss valuable leads to marketing action.

Consider the housewife. She uses many different systems as she goes about her household tasks—cleaning house, preparing food, laundering clothes, caring for the baby, getting ready to go out, and the like. Here the housewife, like other consumers, functions much as do other economic entities. She buys, transports, and changes raw materials into finished products in a sequence of events that is more or less efficient, more or less satisfying. Thus, a manufacturer who wants the housewife's "business" has to produce and sell a product which will, in meaningful ways, "plug into" the systems relevant to her. He has to have a practical understanding of what she is doing —the various products she uses, the different actions she takes—the total system in question.

EXAMPLE. Here is a general description of the steps involved in laundering clothes. In studying this system, the reader should keep in mind that only a bare skeleton is being presented; for the system to be truly meaningful much more would have to be known about housewives' feelings, thoughts, and attitudes about what they are doing. (Some speculative marketing implications are added in parentheses simply to illustrate the kinds of possibilities.)

The week's accumulation of laundry is sorted into piles. The housewife classifies the clothes to be processed, either by observation or by some predetermined set of "rules". Thus:

Men's white shirts may be handled routinely, but an unusually soiled pair of trousers may require a decision to be made. The housewife may use such standards as appearance, soiling, wrinkling, odor, length of wearing, and type of cloth as bases for her decisions.

Perhaps the men's shirts will be delivered to a Chinese laundry some distance away. (Here a special service is being used. Why is this service so unique? On the other hand, how much of a nuisance is it? Might the Chinese laundry begin pickup and delivery? Couldn't the large commercial laundries duplicate this type of laundering?)

The sorting continues. (How distasteful is sorting to the housewife? Perhaps a powder to reduce odor and mildew in the laundry hamper would be useful. Or perhaps a method of precleaning clothes so that soaking is eliminated would be welcome. Could some kind of sorting rack attachment to an appliance facilitate the process?)

White goods form one pile—sheets, pillowcases, towels, underwear, and so on. This requires hot water and bleach. Especially dirty spots may need individual attention with a brush. (Perhaps a tube of aerosol spray of a special cleaning substance could take care of these.)

Another pile includes the colorful items—blouses, linen napkins,. girls' frocks. These may or may not need hot water. They may possibly need a bit of mending. (May be a little laundry sewing kit would be handy for this.)

Still another pile needs very special handling. Perhaps it includes socks,

delicate undergarments, synthetics, woolens, to be subdivided into those needing cold water, warm water, hand washing, and so on. (Possibly the sink that has been designed out of laundry rooms still has its place after all.)

Some things are to be dry cleaned—sent out or taken to a coin-operated machine. (When will home dry cleaning machines be available? And will there be a market for them?)

Doing the laundry. The products that will be used must be at hand—often a messy array of boxes, bottles (glass and plastic), spray cans, and jars. Like an alchemist the woman will juggle an assortment that may include more than one brand of detergent, bluing, starch, bleach, water softener, fabric softener, spot remover, soap, and hand lotion! (Conceivably, there is room for an integrated line of laundry products with compatible ingredients and matched containers to help organize the array of cleaning staples.) Let's see how the system continues and note what other questions arise:

Piles of clothes are put into the washing machine. Since the piles are of different volume and weight, there are problems in loading. Overloading is not uncommon; underloading is a wasteful irritation. (This problem has been solved by new models that adapt to smaller loads, but are there other refinements still possible?)

There are different kinds of washing machines. The consumer has to judge which is best for her and then live with it. "I'd like one that does everything automatic, but my service man says those give more trouble, and that I'm better off with my simpler machine," is a statement commonly heard among housewives. (Clearly, reliability is still an area with marketing potential.)

Nearby is the box of detergent. The giant box is a real chore to handle and to lug from the supermarket. (Volume delivery would seem a good solution; and perhaps home delivery of barrel-size containers would offer possibilities. Also, since laundries are such wet places, why don't they do something about the boxes that collapse? Plastic containers or plastic-bottom boxes would alleviate this problem.)

Frequently the detergent is added to the wash by pouring from the box "about one cup". There is a general problem of imprecision; women are likely to overdo. (Perhaps the directions should be more explicit, or there should be warning lights or bells; and perhaps the detergent manufacturer could include measuring cups or one-cup automatic dispenser chutes.)

What to do about bleach is a question that needs to be resolved. It is strong and threatening, but routinely useful; powder is safer, but possibly less effective. Bleach may be hard on clothes. It is disheartening to have clothes get frayed and threadbare. On the other hand, they *will* wear out and it is exciting to contemplate the possibility of a new garment. (The

rapidity with which new types of bleaches enter the market indicates that there remains an unsatisfied need here.)

Washing chores vary with the kind of machines women have—whether a washer-dryer, or separate appliances. As the process goes on, the clothes are spread around in different states of handling—dirty, wet, dry, ironed, waiting ironing from last time, poorly done pieces that need re-doing, things that need touching up. (Laundries and utility rooms are not always well planned, even in new homes. There is still a market for intelligent architectural attention to working space and its organization. On the other hand, may there not also be a certain amount of pleasure in being ankle deep in clothes that are gradually working their way to cleanliness?)

Dealing with lint is a problem. Lint removers (Scotch tape, sticky drums, and the like) for dry clothes, and lint removers in appliances are helpful, but still a bother. Washer and dryer lint traps are commonly neglected and may lead to mechanical problems. Many housewives end up washing dark things by hand to avoid lint. (Surely improvements are possible here.)

The housewife continues with the laundry task, perhaps also attending to children, preparation of meals, alert to clicks, buzzers, bells, agitator rhythm, and so on. Strangely enough, doing the home laundry is more complicated and more time-consuming than it used to be, owing to the proliferation of fabrics, machines, and washing ingredients. All the way through the system, many products are being used—softened water, implements, appliances, cleansers, aids—some casually, some with irritation, some with pleasure. Too much detergent may produce too many suds; too much softener makes the clothes feel too smooth (even "slimy"); too much bleach is hazard; the iron may scorch; a pipe leaks; buttons pop off; the dryer burns too hot —but the result may be, to the housewife, a fragrant, warm, fluffy pile of gratified accomplishment.

This analysis of the home laundry system is meant only to be suggestive; a properly done, more intensive, detailed analysis would be voluminous. But, hopefully, even this overly general analysis does indicate how knowledge of the total system, more fully and carefully dissected, can alert the manufacturer to certain facts:

The housewife is acting in an orderly or purposeful way, in the terms in which she defines her problems and tasks.

There are a series of interrelated steps which require consumer decision making based on knowledge, expectations, and standards (as well as on ignorance, surprise, and uncertainty).

Any laundry product is used with other products with which it must be compatible.

Questions arise from this type of analysis that point the way to new products or to a clearer understanding of consumer motivations by which old products can be marketed more effectively.

EXHIBIT I illustrates this total home laundering system. The various circles also indicate how it is made up of several (to some extent overlapping) subsystems.

Interrelated Subsystems

Many companies have gone quite far in another direction: identifying consumer groups, usually called market segments, that have different characteristics which (a) make them particularly good prospects for different varieties of product or service, and (b) make special product designs or marketing efforts directed at them enough more effective to more than repay the added cost of the specialization. But note how much more effective such segmentation can be if, again, it is tied not only into consumer characteristics (like income, geographic location, or education) but also into the different consumer goals that distinguish various consumption systems *and subsystems.*

Not only is every product (or service) part of some total consumption system, but also there are usually several distinct and definable subsystems in operation, because :

(1) Most problems can be solved with several different products, and most tasks can be performed in several different ways. Think of the various activity patterns which are in operation merely in the process of washing men's shirts—by hand or machine at home, commercial laundry, the laundromat, Chinese laundry, bachelor service, and so on.

(2) Different people have different goals in solving a problem or performing a task. Thus:

Our wristwatch manufacturer can focus on occupational use—railroad engineers, executives, secretaries, night watchmen, and so on (with a different subsystem for each, if he finds it worthwhile to go that far). Or he can focus on social use, in which case he may find problems and opportunities among people who are obsessive about being on time (which suggests automatic timing devices) versus people who use time maturely as a way of relating to other people in a socially synchronized way (and just how they do it may give him clues to watches for children, cocktail wear, and jewelry adornment).

Similarly, a manufacturer of a fabric softner will develop one kind of orientation if his interest is in consumption systems which relate to fabric protection. Longevity, resistance to weather and insects, odor, and hygiene —these will be the basic functions he will focus on. But if his interest primarily relates to fabric beautification, then softness, wrinkle-resistance, color enhancement, and so on will be the functions of interest to him.

A company in the petroleum industry will follow quite different courses depending on whether it sees itself as fitting into a system which provides

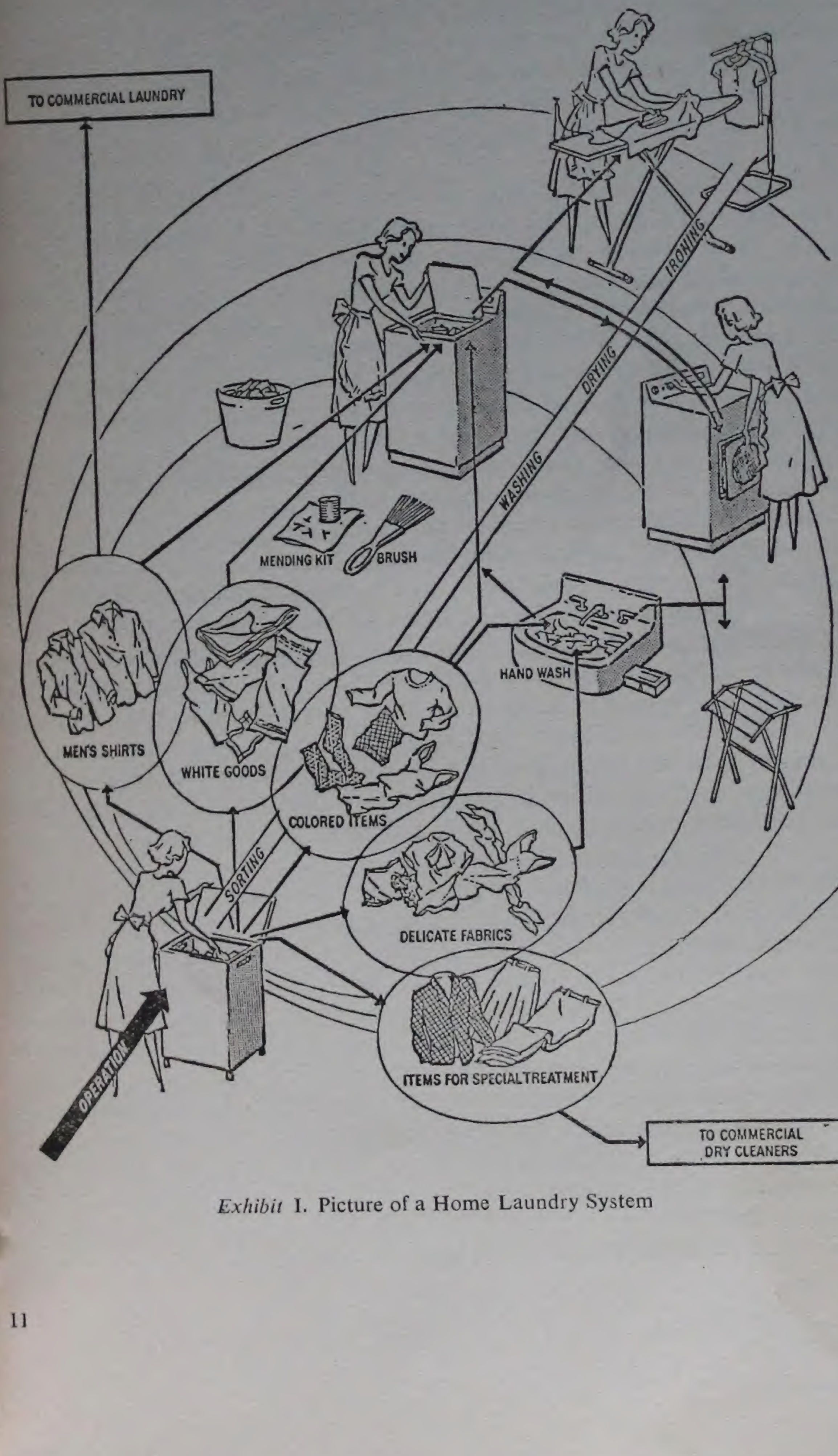

Exhibit I. Picture of a Home Laundry System

power, automotive service, transportation facilitation, or, as some companies are tending, as part of a system involving a conveniently located channel of distribution for a variety of products.

(3) People have different goals for different parts of a total consumption system. For example, a home gardener may want to cut his grass as painlessly and quickly as possible, but he may enjoy lavishing great care on his rose bushes.

EXAMPLE. Now, see what happens when we combine all of these differences—people, products, and goals—into a network of subsystems. For this purpose let us develop our gardening example in detail.

Suppose there are three major types of gardeners: (*a*) owners of small properties, casual about gardening; (*b*) owners of small properties, careful about gardening; and (*c*) owners of large properties, casual about gardening. In real life, the lines would not be drawn so sharply, there would be much overlap, and there would be other types of gardeners; but let us assume that for practical purposes they comprise most of the market.

Further, let us take three kinds of gardening products—lawn mowers, sprinklers, and chemical sprays—and see how they fit into the three separate systems of the three major types of gardeners. Actually, the three consumer groups differ among themselves in the goals that they have for each of the products. Even more significantly, within each consumer group the gardeners have different goals for the three different products, springing from the different ways they use the products in their total gardening consumption systems. Thus, there is a constellation of goals in each case (in real life there would of course be as many more sets of goals as there would be different products or different uses involved).

Consider, first, the three different gardening systems for the three different types of gardeners (identified by the relative size of their property and their general attitude) as far as their lawns and roses are concerned:

The small, casual gardener drags out the lawn mower when the grass begins to look untidy (to his wife, most likely), gets the job over with as quickly and easily as he can. But he loves and enjoys his roses, in part because they do not seem to call for the same effort, in part because they are more rewarding. So on other, more numerous occasions, he tends his roses, pruning them a little, raking around them a little; and if the bugs are eating the leaves, he will eagerly buy some chemical preparation and spray them, with much concern that he has the right brand. On still other occasions, when the grass looks dry (to his wife) or the roses look thirsty (to him), he'll do some watering, letting the spray cover grass and bushes alike.

The small, careful gardener, however, will treat both his lawn and his roses with great care, on a planned schedule, with different amounts of care and different kinds of treatment for each. He is particular about having his

grass just the right height—not letting it get so high it looks shaggy or cutting it so low it burns—but also varying it according to the season and weather. He applies his insecticide and does his watering *before* it is needed, being sure the spray doesn't wash the chemical off the roses, never watering the lawn in the heat of the sun, and doing a lot of deep soaking around the roots of the rose bushes. Note that he needs a watering device which will not just take care of the lawn but will be right, in a quite different application, also for the roses; that he will buy different kinds of chemicals, whose properties he knows from reading a horticultural magazine; and that it is more important for his lawn mower to have adjustable blades than to be easy and simple to use.

As for the large, casual gardener, every Saturday morning (if he plays golf in the afternoon) or every Saturday afternoon (if he plays golf in the morning), he get out his power mower and begins to enjoy the spectacle of himself riding up and down on his flashy steed. From time to time he dismounts, for a quick drink or to get the watering started where he has just mowed, or both. Finally, he gives the roses a quick going over, not noticing the destructive work of the bugs unless it gets so bad that it mars the appearance of the total landscape —and then, if it does, he sends out impatiently, and with some annoyance, for something—anything—with which to spray them. He really enjoys the mowing, because it shows him off, but the roses are only a necessary background, and the watering is a nuisance.

Next, note that each of the *three* gardener types has a different set of goals for each of the *three* different products, depending on how he uses them; and even though all are gardeners, interested in lawns and roses, their use behavior for just this much of their total gardening add up to three times three, or nine, subsystems (see EXHIBIT II).

Now consider, more fully, some of the marketing implications of looking at gardening as a consumption system made up of consumption subsystems:

(1) Mention has already been made of the implications for product design in the case of one product—lawn sprinklers. In the same way—but with different results, because the subsystems of consumption are different for the other two products—the insecticide manufacturer and the lawn-mower manufacturer can design their products to fit the needs of the three major types of gardeners. There are also implications if any one of these manufacturers is thinking of diversifying into other products. If an insecticide manufacturer with a strong following in the small, casual group wants to capitalize on this fact in the mower market, then he must have an economy-model mower to go with his high-quality spray.

(2) In the matter of distribution channels, the same insecticide manufacturer faces a dilemma. His lawn mowers may sell through hardware stores and discount houses, but the same people who buy mowers there will go to a garden center for their rose bush sprays (for the sake of professional advice). His alternative, then, might be to expand his line of sprays and

Exhibit II. Analysis of three different products in context of total gardening consumption system (much abbreviated) with nine subsystems (three different types of gardeners, or market segments, with three subsystems each)

Three major types of gardeners	*Lawn mowers (for grass)*	*Watering devices (for grass and rose bushes)*	*Insecticides (for rose bushes)*	*Marketing application*
A "SMALL, CASUAL" Owner of small property	Wants a product that is simple, rugged, easy to use	Wants anything that promises coverage of lawn	Wants one good formulation, easy to apply	Product design
Attitude toward gardening : casual, pleasurable	Will buy anywhere he can inspect it and buy it cheaply	Will buy anywhere it can be sold cheaply and inspected	Will buy where he can get advice	Channel of distribution
Gardening work habits : little-by-little, intermittently Schedule : random, impulsive	Goal : to get the job done quickly and conveniently	Goal : to cover the lawn with minimum of moving (no special thought about roses)	Goal : to rescue attacked plants and bring them back to health	Advertising
Interests : grass for cover and durability, roses for fun	Wants a bargain	Wants a bargain	Will pay a high price, if product promises to be successful	Pricing
B "SMALL, CAREFUL" Owner of small property	Wants adjustable blades, special attachments	Wants a small device, with fine, slow, manipulatable spray, and special attachment for soaking	Wants a complex formulation, several varieties, which can be applied precisely	Product design
Attitude toward gardening : careful, precise	Will buy where quality is assured	Will buy where quality is assured	Will buy where quality is assured	Channel of distribution
Gardening work habits : constantly, all leisure time				

Schedule : planned timing for lawn and roses with proper proportions of care for each	Goal : to secure precise, tailored lawn	Goal : to give different objects the kind of watering they individually require	Goal : to protect plants so they will never be attacked by disease	Advertising
Interests : obsessive desire for perfection of both lawn and roses	Will pay a high price if product has proper features	Will pay a high price if product has proper features	Will pay a high price but it must promise economy for effect secured	Pricing
C "LARGE, CASUAL" Owner of medium-size to large property	Wants something big and pretentious (with fancy gadgets)	Wants anything that promises wide coverage of lawn	Wants any formulation, easy to apply	Product design
Attitude toward gardening : casual, expansive, and sporty	Will buy where appropriate for "estate" owners to go	Will buy anywhere convenient	Will buy anywhere convenient	Channel of distribution
Gardening work habits : makes a big production of everything	Goal : to cover a lot of lawn quickly and show off while doing it	Goal : to cover the maximum amount of lawn with a lot of water (no special thought about roses)	Goal : to restore attacked plants to decent appearance	Advertising
Schedule : does chores in regular sequence Interests : great sweeps of lawn, great clumps of roses	Will pay a high price if product has proper features	Will pay a high initial price, but the product must be economical when expanded into a system	Wants a bargain	Pricing

attract the small, careful group B, thus capitalizing on his position in that type of outlet. On the other hand, the manufacturer of lawn mowers bought principally by the small, casual group could easily diversify into sprinklers, since they would be bought by the same people at the same kind of outlet.

(3) As for advertising, there would be the same crisscross (in some cases, re-enforcing; in other cases, conflicting) of quality and complexity versus economy and convenience. Involved would be not only the kinds of appeals to be used, but also the media to convey them, the amount of money to be spent, and even the timing. Manufacturers of lawn-mowers and sprinklers for groups A and C would spend less on national advertising, more on cooperative advertising (with dealers) or promotion of sales in local newspapers. Manufacturers of insecticides would stress chemical quality, early in or ahead of the season, in horticultural journals, in order to reach Group B; and do dealer promotion with garden centers during the season, for group A. And so on.

(4) In pricing, too, the problems and opportunities for the nine subsystems shown in EXHIBIT II would differ because of the different uses (and attendant goals) of the three market segments for the three products. The insecticide manufacturer can charge a high price for his product sold through garden centers to groups A and B, but he had better have a cheap product (under another brand name, perhaps) for sale through hardware stores to group C. And the lawn-mower manufacturer who observes many group A gardeners paying a high price for insecticides dare not conclude that these same gardeners will also pay a high price for his mowers.

The important point is that many of these insights would not result from generalizations either about market segments or product use, generalizations which would hide the sharp differences that become apparent from looking at the total consumption system and the nine subsystems corresponding to the three different products and the three different types of gardeners.

If one thinks of the consumer as operating a manufacturing process by which some end product emerges, it is easy to see that a variety of systems and subsystems would be in operation at any one time and that they would have some degree of relationship. While we have no desire to complicate the system concept further by introducing the notion of still wider systems, it is important for any seller to go far enough in his thinking to relate one consumption system to any wider systems which exist and which have an important effect on the operation of the system in which he has an immediate interest. For example, a marketer would be ill-advised to define a consumption system for a gardening product without recognizing that this system is related to and dependent on a wider system of acts and ideas pertaining to the whole changing pattern of leisure time in this country.

INDUSTRIAL PRODUCTS

Systems for industrial products are in some ways easier to specify if only

because they are more precise and logical in their operation. It can be well argued that anyone producing an industrial good should develop a system which starts with the consumer and moves all the way back to the production of the goods that, in turn, produce the goods (and so on) which are consumed by the consumer. The producer of industrial goods or supplies can typically be more successful if he helps his potential customers "create a customer". To do this requires that he understands the (relative) totality of the system even if, at best, he learns this primarily from research done by customers.

At the very minimum, a seller of an industrial product should concern himself with "where" his product fits into the manufacturing process of his potential customers. It must be compatible with prior parts of the process as well as with subsequent steps. Any change in any part of the process is likely to have an effect on all other parts—a fact that the manufacturer selling into the system must keep in mind. He can better protect against obsolescence, as well as do a better job of selling, if he knows his constraints; that is, if he understands the needs of the system.

Take, for example, the manufacturer of plastic materials designed to be used in the packaging of food:

This manufacturer would—or should—be concerned with a protection system which would solve such problems as spoilage, prevention of color fading, shrinkage, product visibility, and ease of storage and shipment. To market his product effectively, he would have to know and understand the various production systems currently in use by manufacturers of different food products: for example, fresh fruit and vegetables, smoked meats, poultry, fish and seafoods, and cheese. In addition, he would have to know the distribution systems in use, including physical handling, shipment, storage, shelf life, exposure to store traffic, markups, and amount of handling. Further, he would be interested in the consumer system that the product is a part of including place of storage, product life span in terms of replacement rate, and need for resealing.

As an actual case in point, the Cryovac Division of W. R. Grace and Company developed a vacuum-sealing process which in actuality was a major component of the total production, distribution, and consumer systems for meat, poultry, cheese, and fish. Since the Cryovac process necessitated the use of manual or automatic machines, company salesmen had to perform such activities as helping train labor, helping in the promotion of Cryovac-wrapped products to the trade, and helping to show how to install a product line using the Cryovac process.

Agricultural machinery also illustrates the value of the system concept, although there is little to suggest that most such manufacturers have applied themselves diligently to learning about the various farm systems in effect. With the growth in the number of large farms, we find many analogies between farming and manufacturing. More and more machinery is being

required to displace high-cost labor. Yet it is doubtful if many manufacturers consider the farm as a systematic production unit, and have studied the nature of the job to be done (for instance, on a time and motion basis) to determine the most efficient "factory layout" and machinery required.

On the other hand, farm machines have been developed which represent integral systems unto themselves. Some of these machines might have been developed earlier if manufacturers had analyzed the total process. Take, for example, the harvesting of corn:

Until recently the corn combine piece of machinery was limited to harvesting shelled corn in either a moist or dry state. Corn cobs were left in the field. Such a machine, of course, represented a radical improvement over earlier machines, since it picked and shelled, whereas previously, different machines were required. Now corn can be picked, shelled, and mixed or combined in the form of whole shelled corn with broken cobs by a single machine. In fact, some machinery manufacturers sell in terms of "systems" which require the use of two or more pieces of machinery to do a total job. Thus, in corn harvesting, one can by the addition of a dryer, a wagon dump, a chuck (storage) wagon, and escalators (for moving corn into the bins) complete the entire process with one basic machine.

In the past few years, the agricultural industry has experienced substantial unrest caused by the innovative tactics of smaller firms versus the giants who have continued largely to sell machinery on a dollar-per-pound-of-iron basis. Much of this new machinery gives evidence that the inventors understand, at least pragmatically, the nature and functioning of the system approach. Thus, for example, a new ingenious mechanized potato harvester has been developed that permits a crew of 8 to do the work of 30 diggers.

MARKETING DECISIONS

The analysis of consumption systems should be helpful to the management of a firm in many ways. It can serve to identify more precisely the company's corporate objectives, construct a plan of action, organize to carry out the plan (including finance, R and D, and production as well as marketing), and set up a control-reappraisal system. Here, however, we will discuss the relation of consumption systems to marketing strategy and gather together a few of the more important implications to show how this focus on consumption systems helps to enrich and coordinate various planning and decision-making areas in marketing.

Product & Product Line

When the manufacturer knows and keeps current the details of the consumption systems pertinent to his products, then he is in a better position to assess opportunities (perhaps he can reset housewife standards with a new

or modified product) as well as threats (for example, the development of new washing machines which clean by vibration). We can also assume that a knowledge of the more important systems will help him to innovate, or at least provide him with a better understanding of the chances to innovate. The part his product plays in the total system, when made reasonably explicit, should enable him to gain a better understanding of his role in the consumer's life. Further, he has a point of reference from which to judge how the passage of time and the actions of his competitors may be changing the system. Consequently, he will be better able to spot new opportunities as they arise.

More often than not, innovations are actually little more than a rearrangement or collapsing of the parts of a given system. This rearrangement usually represents an easier, or less costly, or more attractive, or more efficient way of solving the basic need.[3] In most cases, the rearrangement of steps involves combining and shortening. Most consumer goods innovations have, in recent years, been of this type. Many new products have been created when several "specialized" products have been combined into one. Thus:

A classic example is in the home laundry field where detergents, bluing, and softeners have been combined.

Combination has been accomplished with a number of food products such as ready-to-eat cereals with sugar added, lemon-flavored sugar lumps for tea, frozen vegetables with butter sauce, cake mixes which include eggs, and, of course, pre-cooked meals.

In the world of machines for use in the home, the electric refrigerator with automatic defrosting, the gas or electric stove with its automatic timer, the radios and hi-fi sets which turn themselves off, the TV sets with their armchair controls, and the garage doors that open on signal, all are examples of admirable ingenuity that did not require tapping novel scientific principles.

The car has been the locale of many innovations, all involving a shortening of steps—automatic transmissions, longer greasing intervals, more miles to an oil change, push-button window washers, to note a few.

The innovations in cameras have centered recently around doing away with the light meter, the range finder, and even the developer as separate parts of the system.

If a manufacturer knows where his product fits into the steps in a system, he can better estimate the possibility of effecting innovation. This is accomplished by an examination of the steps prior to and subsequent to the point at which the product in question enters the system. He can frequently estimate the vulnerability of his current product by evaluating the other

[3] See Elting E. Morison, "A Case Study of Innovation," *Engineering and Science Monthly*, April 1950.

products which enter the system before and after his own product or are used in direct conjunction with it. Innovation by reaching back or by reaching forward in the system is, as has been stressed earlier, a common fact of life.

Research and development personnel need such a precise frame of reference within which to work. Knowledge of the steps in the individual consumption systems as well as the variety of alternative systems employed should provide them with the challenge, as well as the operational objectives, they so badly need. Assessing what they can do, both with current technology and with probable future technological changes, can help them provide the company with a higher return on R & D investments.

It is important, also, not to let one's thinking become too behavioristic. Just analyzing the mechanical steps in a system may not in itself generate useful ideas. In analyzing any consumption system, the engineer should think about the "problem" that users may feel at any given point. People are not always looking for efficiency, economy, and the like, as most impersonal analyses tend to assume. They may want distraction, aesthetics, individual expressiveness, pretentiousness, speed, and quiet.

Advertising Strategy

Advertising effectiveness obviously depends on the availability of a considerable amount of detailed information which will permit the determination of the role to be played by advertising, the advertising objectives, the proper choice of advertising copy, the coordination of advertising with other sales promotion activities, and the preparation of the advertising budget. Since consumers typically think in terms of product functions subjectively, and concern themselves with the ways in which products fit into their activities, it would seem that the systems approach would prove extremely helpful in advertising—if only because it presents a unified picture of the process by which a given task is accomplished, *including* the rationale, standards, and emotions involved. At the least such a wholeness would help the advertiser see his product in relation to the total operation, to see its relative importance to other products used in the system, to understand more fully what its real contribution is to the user, and to learn more about *why* it is used.

Knowing the point of entry of the product into the consumption pattern makes the appropriate appeals more apparent. It poses this question: What is the unique role the product plays in bridging the gap between prior and subsequent steps? Sometimes after analysis of the *true* action system, rather than the presumed, an advertiser may call for changes in his appeals that go counter to the overly generalized beliefs about consumer behavior that are accepted in his industry. Here are two examples:

(1) The decision to sell fresh chilled orange juice a "refreshing drink always available from your refrigerator" is a case in point. But an analysis of the

consumption system for fresh squeezed juice shows obstacles to this idea. Housewives typically serve juice in small glasses and have not prepared it in quantities to be stored. They regard it as precious. Also it is acid in content, they believe; too much is not healthy. And if it stands, its value declines. In the light of this analysis, what should the advertiser do to modify the situation?

(2) Aiming Gleem toothpaste at "people who can't brush after every meal" represents an interesting recognition and exploration of an actual system with which many people feel uncomfortable because it is not the sanctioned system. The TV situations showing why a busy life precludes brushing after every meal are ones with which the housewife can readily identify. Here the advertiser is adapting to reality.

Pricing Policy

As part of solving his price problems, the manufacturer explores the preferences and educability of his consumers. An analysis of the consumer systems employing his products will be extremely helpful. If, for example, a "new" product has little effect on the totality of the way consumption is currently organized in terms of time, general cost, and final satisfaction in the goal, there is little reason to believe that it will command a premium price. All too often the manufacturer exaggerates the importance of his new item, failing to realize that it is but a very small part of a ramified pattern.

Conversely, he may underestimate the importance of a small item which actually may have much to offer in a lengthy or relatively unpleasant system. Here is an interesting illustration:

A manufacturer of point-of-sale displays used at trade shows and conventions designed a prefabricated unit consisting of a number of panels that could be locked together with fiber plugs. The appearance of this prefab unit was equal to that of the highest priced wooden displays and could be set up by two men in less than one hour.

Rather than take essentially a cost approach to the problem of what initial price to charge for such a new unit, this manufacturer would have been well advised to study the consumption system for all such units and determine what effect the prefab unit would have on the total system. The costs and time involved in the selling process, the shipping costs (from one show to another), the deterioration owing to improper handling during shipment, the assembly time at the convention site, the dismantling time, the frequency and extent of refurbishing—all these and other components of the use system involved (attitudes and feelings of workers at these various steps) should have been analyzed before an attempt was made to arrive at a "best" market price.

Pricing may also be related to the expected life span of a product. Instead of waiting to see how long an object lasts in wear, manufacturers should

maintain an up-to-date, ongoing knowledge of how well and how long the product keeps functioning in the system. A far more realistic pricing strategy will be the result.

Personal Selling

The salesman's role or mission is changing in many firms—especially those selling technical products to industry. More and more, he is looked upon as a communication link between the seller and the marketplace. Increasingly, he is the "feedback" agent as to what the market wants and needs, as well as being the vertical thrust agent who sells the product. It is obvious that to execute these roles with efficiency requires an understanding on his part of the systematic process facilitated by his product. For example:

A salesman selling building materials must be able to demonstrate to architects, contractors, and engineers that his product is not only compatible with other products in the system, but that it is not at odds with the human factors which may be involved, for instance, existing skills of labor.

House-to-house and route salesmen should be aware of the characteristic ongoing patterns of living they are attempting to break into. A route man is asking an established system to alter and make a position for him in the stream of events. Thus:

A study for the Jewel Tea Company by Social Research, Inc. found that a large number of "customers wanted a route man who was friendly, congenial but 'not too nice', submissive, and conforming to requests and routines. He should be sensitive to the amount of socializing desired by the customer, allow her to set the pace, and then follow it quickly and willingly. He should follow a regular schedule of visits."[4]

CONCLUSION

An analysis of consumption systems should provide manufacturers with data which are useful in many marketing decision areas. Such analyses give a perspective of the process by which consumers satisfy their basic wants and needs; they make available a framework within which the company can exercise its imagination in product innovation, in advertising strategy development, in pricing policy, and in sales activities.

But systems can only be understood if they are seen as a series of interlocking steps. This coherent, connected view avoids the distortion resulting from studying bits and pieces of market information which are the usual fare of the marketer. In particular, the systems approach should facilitate

[4] See Joseph W. Newman, *Motivation Research and Marketing Management* (Boston: Division of Research, Harvard Business School, 1957), p. 355.

nnovation, since most "new" products are new only in the sense that they re a combination of products used in two or more steps in a system.

Today's rapidly increasing expenditures for R & D require that the efforts of creative personnel be directed towards obtainable and meaningful innovations. These can best be achieved through an understanding of consumer systems relevant to their companies' products. Such an approach should be welcomed by technical personnel once they are trained to think along such lines.

9 / Management Myopia

THEODORE LEVITT

The author argues in favor of custom-oriented management and demonstrates its importance by citing a number of successful and unsuccessful case histories. He points out that declining industries were once growth industries and that it was management's failure rather than market saturation which was responsible for the declines. To be a success over time requires companies to think of themselves not as firms producing goods and services but as those which buy customers.

SHADOW OF OBSOLESCENCE

It is impossible to mention a single major industry that did not at some time qualify for the magic appellation of "growth industry". In each case its assumed strength lay in the apparently unchallenged superiority of its product. There appeared to be no effective substitute for it. It was itself a runaway substitute for the product it so triumphantly replaced. Yet one after another of these celebrated industries has come under a shadow. Let us look briefly at a few of them, this time taking examples that have so far received a little less attention:

Dry Cleaning. This was once a growth industry with lavish prospects. In an age of wool garments, imagine finally being able to get them safely and easily cleaned. This boom was on.

Yet here we are thirty years after the boom started, and the industry is in trouble. Where has the competition come from? From a better way of cleaning? No. It has come from synthetic fibers and chemical additives that have cut the need for dry cleaning. But this is only the beginning. Lurking in the wings and ready to make chemical dry cleaning totally obsolescent is that powerful magician, ultrasonics.

Electrical Utilities. This is another one of those supposedly "no-substitute" products which has been enthroned on a pedestal of invincible growth. When the incandescent lamp came along, kerosene lights were finished. Later the water wheel and the steam engine were cut to ribbons by the flexibility, reliability, simplicity, and just plain easy availability of electric motors. The prosperity of electrical utilities continues to wax extravagant as the home is

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onverted into a museum of electrical gadgetry. How can anybody miss by ıvesting in utilities, with no competition, nothing but growth ahead?

But a second look is not quite so comforting. A score of nonutility com- anies are well advanced toward developing a powerful chemical fuel cell vhich could sit in some hidden closet of every home silently ticking off electric ower. The electric lines that vulgarize so many neighborhoods will be liminated—so will the endless demolition of streets and service interruptions luring storms. Also on the horizon is solar energy, again pioneered by non-itility companies.

Who says that the utilities have no competition? They may be natural nonopolies now, but tomorrow they may die natural deaths. To avoid this, they too will have to develop fuel cells, solar energy, and other power sources. To survive, they themselves will have to plot the obsolescence of what now produces their livelihood.

Grocery Stores. Many people find it hard to realize that there ever was a thriving establishment known as the "corner grocery stores". The super-market has taken over with a powerful effectiveness. Yet the big food chains of the 1930s narrowly escaped being completely wiped out by the aggressive expansion of independent supermarkets. The first genuine supermarket was opened in 1930, in Jamaica, Long Island. By 1933 supermarkets were thriving in California, Ohio, Pennsylvania, and elsewhere. Yet the established chains pompously ignored them. When they chose to notice them, it was with such derisive descriptions as "cheapy", "horse and buggy", "cracker-barrel store-keeping", and "unethical opportunists".

An executive of one big chain announced at the time that he found it "hard to believe that people will drive for miles to shop for foods and sacrifice the personal service chains have perfected and to which Mrs. Con-sumer is accustomed".[1] As late as 1936, the National Wholesale Grocers convention and the New Jersey Retail Grocers Association said there was nothing to fear. They said that the supers' narrow appeal to the price buyer limited the size of their market. They had to draw from miles around. When imitators came, there would be wholesale liquidations as volume fell. The current high sales of the supers was said to be partly due to their novelty. Basically people wanted convenient neighborhood grocers. If the neighbor-hood stores "cooperate with their suppliers, pay attention to their costs, and improve their services", they would be able to weather the competition until it blew over.[2]

It never blew over. The chains discovered that survival required going into the supermarket business. This meant the wholesale destruction of their huge investments in corner-store sites and in established distribution and merchandising methods. The companies with "the courage of their convic-

[1] For more details see M. M. Zimmerman, *The Supermarket: A Revolution in Distribution,* McGraw-Hill Book Company, Inc., New York, 1955, p. 48.

[2] *Ibid.,* pp. 45-47.

tions" resolutely stuck to the corner-store philosophy. They kept their prin but lost their shirts.

SELF-DECEIVING CYCLE

But memories are short. For example, it is hard for people who today confidently hail the twin messiahs of electronics and chemicals to see how things could possibly go wrong with these galloping industries. They pro bably also cannot see how a reasonably sensible businessman could have been as myopic as the famous Boston millionaire who fifty years ago unintentionally sentenced his heirs to poverty by stipulating that his entire estate be forever invested exclusively in electric-streetcar securities. His posthumous declaration, "There will always be a big demand for efficient urban transportation", is no consolation to his heirs who sustain life by pumping gasoline at automobile filling stations.

Yet, in a casual survey I took among a group of intelligent business executives, nearly half agreed that it would be hard to hurt their heirs by tying their estates forever to the electronics industry. When I then confronted them with the Boston streetcar example, they chorused unanimously, "That's different"! But is it? Is not the basic situation identical?

In truth, I believe, there is no such thing as a growth industry. There are only companies organized and operated to create and capitalize on growth opportunities. Industries that assume themselves to be riding some automatic growth escalator invariably descend into stagnation. The history of every dead and dying "growth" industry shows a self-deceiving cycle of bountiful expansion and undetected decay. There are four conditions which usually guarantee this cycle:

1. The belief that growth is assured by an expanding and more affluent population
2. The belief that there is no competitive substitute for the industry's major product
3. Too much faith in mass production and in the advantages of rapidly declining unit costs as output rises
4. Preoccupation with a product that lends itself to carefully controlled scientific experimentation, improvement, and manufacturing cost reduction.

I should like now to begin examining each of these conditions in some detail. To build my case as boldly as possible, I shall illustrate the points with reference to three industries—petroleum, automotive, and electronics—particularly petroleum, because it spans more years and more vicissitudes. Not only do these three have excellent reputations with the general public and also enjoy the confidence of sophisticated investors, but their managements have become known for progressive thinking in areas like financial control, product research, and management training. If obsolescence can cripple even these industries, it can happen anywhere.

POPULATION MYTH

The belief that profits are assured by an expanding and more affluent population is dear to the heart of every industry. It takes the edge off the apprehensions everybody understandably feels about the future. If consumers are multiplying and also buying more of your product or service, you can face the future with considerably more comfort than if the market were shrinking. An expanding market keeps the manufacturer from having to think very hard or imaginatively. If thinking is an intellectual response to a problem, then the absence of a problem leads to the absence of thinking. If your product has an automatically expanding market, then you will not give much thought to how to expand it.

One of the most interesting examples of this philosophy is provided by the petroleum industry. Probably our oldest "growth" industry, it has an enviable record. While there are some current apprehensions about its growth rate, the industry itself tends to be optimistic. But I believe it can be demonstrated that it is undergoing a fundamental yet typical change. It is not only ceasing to be a growth industry but may actually be a declining one, relative to other business. Although there is widespread unawareness of this fact, I believe that, unless it changes drastically, within twenty-five years the oil industry may find itself in much the same position of retrospective glory that the railroads are now in. Despite its pioneering work in developing and applying the present-value method of investment evaluation, in employee relations, and in working with backward countries, the petroleum business is at times a distressing example of how complacency and wrong-headedness can stubbornly convert opportunity into near disaster. Only in the last two years does it seem to have been aroused out of its heavy slumber.

One of the characteristics of this and other industries that have believed very strongly in the beneficial consequences of an expanding population, while at the same time being industries with a generic product for which there has appeared to be no competitive substitute, is that the individual companies have sought to outdo their competitors by improving on what they are already doing. This makes sense, of course, if one assumes that sales are tied to the country's population strings because the customer can compare products only on a feature-by-feature basis. Hence I believe it is very significant that not since John D. Rockefeller sent free kerosene lamps to China has the oil industry done anything really outstanding to create a demand for its product. Not even in product improvement has it showered itself with eminence. The greatest single improvement, namely, the development of tetraethyl lead, came from outside the industry, specifically from General Motors and Du Pont. The big contributions made by the industry itself are confined to the technology of oil exploration, production, and refining.

ASKING FOR TROUBLE

In other words, the industry's efforts have focused not nearly so much on improving the generic product or its marketing as on improving the efficiency of getting and making its product. Moreover, its chief product has, until quite recently, continuously been defined in the narrowest possible terms, namely, gasoline, and not energy, fuel, or transportation. This attitude has helped assure that:

1. Major improvements in gasoline quality in the past have tended not to originate in the oil industry itself. Also, the development of superior alternative fuels comes from outside the oil industry, as will be shown later.
2. Major innovations in automobile fuel marketing have been originated by small new oil companies that are not primarily preoccupied with production or refining. These are the companies that have been responsible for the rapidly expanding multipump gasoline stations, with their success emphasis on large and clean layouts, rapid and efficient driveway service, and quality gasoline at low prices.

Thus the oil industry has asked for trouble from outsiders. Sooner or later, in this land of hungry inventors and entrepreneurs, a threat is sure to come. The possibilities of this will become more apparent when we turn to the next dangerous belief of many managements. For the sake of continuity, because this second belief is tied closely to the first, I shall continue with the same example.

IDEA OF INDISPENSABILITY

Until only two years ago the petroleum industry was pretty much persuaded that there was no competitive substitute for its major product, gasoline—or if there was, that it would continue to be a derivative of crude oil, such as diesel fuel or kerosene jet fuel.

There is a lot of automatic wishful thinking in this assumption. The trouble is that most refining companies own huge amounts of crude-oil reserves. These have value only if there is a market for products into which oil can be converted—hence the tenacious belief in the continuing competitive superiority of automobile fuels made from crude oil.

This idea persisted despite all historic evidence against it. The evidence not only shows that oil has never been a superior product for any purpose for very long but also that the oil industry has never really been a growth industry. It has been a succession of different businesses that have gone through the usual historic cycles of growth, maturity, and decay. Its overall survival is owed to a series of miraculous escapes from total obsolescence, of last-minute and unexpected reprieves from total disaster reminiscent of *The Perils of Pauline*....

PRODUCTION PRESSURES

Mass-production industries are impelled by a great drive to produce all hey can. The prospect of steeply declining unit costs as output rises is nore than most companies can usually resist. The profit possibilities look pectacular. All effort focuses on production. The result is that marketing gets neglected.

John Kenneth Galbraith contends that just the opposite occurs.[3] Out- put is so prodigious that all effort concentrates on trying to get rid of it. He says this accounts for signing commercials, desecration of the country- side with advertising signs, and other wasteful and vulgar practices. Galbraith has a finger on something real, but he misses the strategic point. Mass production does indeed generate great pressure to "move" the product. But what usually gets emphasized is selling, not marketing. Marketing, being a more sophisticated and complex process, gets ignored.

The difference between marketing and selling is more than semantic. Selling focuses on the needs of the seller, marketing on the needs of the buyer. Selling is preoccupied with the seller's need to convert his product into cash; marketing with the idea of satisfying the needs of the customer by means of the product and the whole cluster of things associated with creating, delivering, and finally consuming it.

In some industries the enticements of full mass production have been so powerful that for many years top management in effect has told the sales departments, "You get rid of it; we'll worry about profits". By contrast, a truly marketing-minded firm tries to create value-satisfying goods and services that consumers will want to buy. What it offers for sale includes not only the generic product or service but also how it is made available to the customer, in what form, when, under what conditions, and at what terms of trade. Most important, what it offers for sale is determined not by the seller but by the buyer. The seller takes his cues from the buyer in such a way that the product becomes a consequence of the marketing effort, not vice versa.

LAG IN DETROIT

The above may sound like an elementary rule of business, but that does not keep it from being violated wholesale. It is certainly more violated than honored. Take the automobile industry, for example.

Here mass production is most famous, most honored, and has the greatest impact on the entire society. The industry has hitched its star to the relentless requirements of the annual model change, a policy that makes customer orientation an especially urgent necessity. Consequently the auto-

[3] John Kenneth Galbraith, *The Affluent Society*, Houghton Mifflin Company, Boston, 1958, pp. 152-160.

companies spend millions of dollars a year on consumer research. But the fact that the new compact cars sold so well in the very first year of the "Big Three's" entry into this field indicates that Detroit's vast research had for a long time failed to reveal what the customer really wanted. Detroit was not persuaded that he wanted anything different from what he had been getting until it lost millions of customers to other small-car manufacturers.

How could this unbelievable lag behind consumer wants have been perpetuated so long? Why did not research uncover consumer preferences before consumers' buying decisions themselves revealed the facts? Is that not what consumer research is for—to find out before the fact what is going to happen? The answer is that Detroit never properly researched the customer's wants. It only investigated his preferences among the kinds of things which it had already decided to offer him. For Detroit was mainly product-oriented, not customer-oriented. To the extent that the customer was recognized as having needs that the manufacturer should try to satisfy, Detroit usually acted as if the job could be done entirely by product changes. Occasionally financing got some attention too, but that was more in order to sell than to enable the customer to buy.

As for taking care of other customer needs, there is not enough being done to write about. The area of the greatest unsatisfied needs are ignored, or at best get stepchild attention. These areas are at the point of sale and on the matter of automotive repair and maintenance. Detroit considers these problem areas as being of secondary importance. This is underscored by the fact that the retailing and servicing ends of the industry are neither owned and operated nor controlled by the manufacturers. Once the car is produced, things are pretty much in the dealer's inadequate hands. Illustrative of Detroit's arm's-length attitude is the fact that, while servicing holds enormous sales-stimulating, profit-building opportunities, only fifty-seven of Chevrolet's 7,000 dealers provided night maintenance service in 1960.

Motorists repeatedly express their dissatisfaction with servicing and their apprehensions about buying cars under the present selling setup. The anxieties and problems they encounter during the auto-buying and auto-maintenance processes are probably more intense and widespread today than thirty years ago. Yet the automobile companies do not seem to listen to or take their cues from the anguished consumer. If they do listen, it must be through the filter of their own preoccupation with production. The marketing effort is still viewed as a necessary consequence of the product, not vice versa, as it should be. That is the legacy of mass production, with its parochial view that profit resides essentially in low-cost full production.

WHAT FORD PUT FIRST

The profit lure of mass production obviously has a place in the plans and

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trategy of business management, but it must always *follow* hard thinking bout the customer. This is one of the most important lessons that we can earn from the contradictory behavior of Henry Ford. In a sense Ford was oth the most brilliant and the most senseless marketer in American history. He was senseless because he refused to give the customer anything but a lack car. He was brilliant because he fashioned a production system designed o fit market needs. We habitually celebrate him for the wrong reason, his production genius. His real genius was marketing. We think he was able to cut his selling price and therefore sell millions of $500 cars because his invention of the assembly line had reduced the costs. Actually he invented the assembly line *because* he had concluded that at $500 he could sell millions of cars. Mass production was the result not the cause of his low prices.

Ford repeatedly emphasized this point, but a nation of production-oriented business managers refuses to hear the great lesson he taught. Here is his operating philosophy as he succinctly expressed it:

> Our policy is to reduce the price, extend the operations, and improve the article. You will notice that the reduction of price comes first. We have never considered any costs as fixed. Therefore we first reduce the price to the point where we believe more sales will result. Then we go ahead and try to make the prices. We do not bother about the costs. The new price forces the costs down. The more usual way is to take the costs and then determine the price, and although that method may be scientific in the narrow sense, it is not scientific in the broad sense, because what earthly use is it to know the cost if it tells you that you cannot manufacture at a price at which the article can be sold? But more to the point is the fact that, although one may calculate what a cost is, and of course all of our costs are carefully calculated, no one knows what a cost ought to be. One of the ways of discovering... is to name a price so low as to force everybody in the place to the highest point of efficiency. The low price makes everybody dig for profits. We make more discoveries concerning manufacturing and selling under this forced method than by any method of leisurely investigation.[4]

PRODUCT PROVINCIALISM

The tantalizing profit possibilities of low unit production costs may create the most seriously self-deceiving attitude that could afflict a company, particularly a "growth" company where an apparently assured expansion of demand already tends to undermine a proper concern for the importance of marketing and the customer.

The usual result of this narrow preoccupation with so-called "concrete

[4] Henry Ford, *My Life and Work*, Doubleday and Company, Inc., New York, 1923, pp. 146-147.

matters" is that, instead of growing, the industry declines. It usually means that the product fails to adapt to the constantly changing patterns of consumer needs and tastes, to new and modified marketing institutions and practices, or to product developments in competing or complementary industries. The industry has its eyes so firmly on its own specific product that it does not see how it is being made obsolete.

The classical example of this is the buggy-whip industry. No amount of product improvement could stave off its death sentence. But had the industry defined itself as being in the transportation business rather than in the buggy-whip business, it might have survived. It would have done what survival always entails, that is, change. Even if it had only defined its business as providing a stimulant or catalyst to an energy source, it might have continued existence by becoming a manufacturer of, say, fanbelts or air cleaners.

What may someday be a still more classical example is, again, the oil industry. Having let others steal marvellous opportunities from it (e.g., natural gas, as already mentioned, missile fuels, and jet engine lubricants), one would expect it to have taken steps to prevent its happening again. But this is not the case. There have been extraordinary new developments in fuel systems specifically designed to power automobiles. Not only are these developments concentrated in firms outside the petroleum industry, but until their delinquency was pointed out to them a few years ago, most petroleum companies almost systematically ignored them, securely content in their wedded bliss to oil. It is the story of the kerosene lamp versus the incandescent lamp all over again. Most big oil companies are still trying to improve hydrocarbon fuels rather than to develop fuels best suited to the needs of their users, whether or not made in different ways and with different raw materials from oil.

Here are some of the things which nonpetroleum companies are working on:

Over a dozen firms now have advanced working models of energy systems which, when perfected, may very well replace the internal-combustion engine and eliminate the demand for gasoline. The superior merit of each of these systems is their elimination of frequent, time-consuming, and irritating refueling stops. Most of these systems are fuel cells designed to create electric energy directly from chemicals without combustion. Most of them use chemicals that are not derived from oil, generally hydrogen and oxygen. The fact that hydrogen-oxygen systems remain crude and now entail serious combustion hazards has tranquilized most oil companies into a comforting reassurance of their own immortality.

Several nonpetroleum companies have advanced models of electric storage batteries designed to power automobiles. One of these firms is an aircraft producer that is working jointly with several electrical utility companies.

The latter hope to use off-peak generating capacity to supply overnight plug-in battery regeneration. Another company, also using the battery approach, is a medium-size electronics firm with extensive small-battery experience that it developed in connection with its work on hearing aids. It is collaborating with an automobile manufacturer. Recent improvements arising from the need for high-powered miniature power storage plants in rockets have put us within reach of a relatively small battery capable of withstanding great overloads or surges of power. Germanium diode applications and batteries using sintered-plate and nickel-cadmium techniques promise to make a revolution in our energy sources.

Solar energy conversion systems are also getting increasing attention. One usually cautious Detroit auto executive not long ago ventured that solar-powered cars might be common by 1980.

As for most oil companies, they are more or less "watching developments", as one research director put it to me. Two years ago only a few were doing any research on fuel cells, and that was almost always confined to developing cells powered by hydrocarbon chemicals. None of them were enthusiastically researching fuel cells, batteries, or solar power plants. None of them were spending a fraction as much on research in these profoundly important areas as they are on the usual run-of-the-mill things like reducing combustion-chamber deposit in gasoline engines. One major integrated petroleum company not long ago took a tentative look at the fuel cell and concluded that although "the companies actively working on it indicate a belief in ultimate success . . . the timing and magnitude of its impact are too remote to warrant recognition in our forecasts".

One might, of course, ask: Why should the oil companies do anything different? Would not chemical fuel cells, batteries, or solar energy kill the present product lines? The answer is that they would indeed, and that is precisely the reason for the oil firms having to develop these power units before their competitors, so they will not be companies without an industry.

Management might be more likely to do what is needed for its own preservation if it thought of itself as being in the energy business, as a couple of companies have now announced themselves to be. But even that is not enough if they persist in imprisoning themselves in the narrow grip of their tight product orientation. They have to think of themselves as taking care of customer needs, not finding, refining, or even selling oil. Once they genuinely think of their business as taking care of people's transportation or energy needs, nothing can stop them from creating their own extravagantly profitable growth.

"CREATIVE DESTRUCTION"

Since words are cheap and deeds are dear, it may be appropriate to indicate what this kind of thinking involves and leads to. Let us start at

the beginning—the customer. It can be shown that motorists strongly dislike the bother, delay, and experience of buying gasoline. People actually do not buy gasoline. They cannot see it, taste it, feel it, appreciate it, really test it. What they buy is the right to continue driving their cars. The gas station is like a tax collector to whom people are compelled to pay a periodic toll as the price of using their cars. This makes the gas station a basically unpopular institution. It can never be made popular or pleasant, only less unpopular, less unpleasant.

To reduce its unpopularity completely means eliminating it. Nobody likes a tax collector, not even a pleasantly cheerful one. Nobody likes to interrupt a trip to buy a phantom product, not even from a handsome Adonis or a seductive Venus. Hence companies that are working on exotic fuel substitutes which will eliminate the need for frequent refueling are heading directly into the outstretched arms of the irritated motorist. They are riding a wave of inevitability, not because they are creating something which is technologically superior or more sophisticated, but because they are satisfying a powerful customer need.

Once the petroleum companies recognize the customer-satisfying logic of what another power system can do, they will see that they have no more choice about working on an efficient, long-lasting fuel (or some way of delivering present fuels without bothering the motorist) than the big food chains had about going into the supermarket business, or the vacuum-tube companies had about making semiconductors. For their own good the oil firms will have to destroy their own highly profitable assets. No amount of wishful thinking can save them from the necessity of engaging in this form of "creative destruction".

I phrase the need as strongly as this because I think management must make quite an effort to break itself loose from conventional ways. It is all too easy in this day and age for a company or industry to let its sense of purpose become dominated by the economies of full production and to develop a dangerously lopsided product orientation. In short, if management lets itself drift, it invariably drifts in the direction of thinking of itself as producing goods and services, not customer satisfactions. While it probably will not descend to the depths of telling its salesmen, "You get rid of it; we'll worry about profits", it can, without knowing it, be practicing precisely that formula for withering decay. The historic fate of one growth industry after another has been its suicidal product provincialism.

DANGERS OF R & D

Another big danger to a firm's continued growth arises when top management is wholly transfixed by the profit possibilities of technical research and development. To illustrate I shall turn first to a new industry—

lectronics—and then return once more to the oil companies. By comparing fresh example with a familiar one, I hope to emphasize the prevalence and nsidiousness of a hazardous way of thinking.

In the case of electronics, the greatest danger which faces the glamorous ew companies in this field is not that they do not pay enough attention to esearch and development but that they pay too much attention to it. And he fact that the fastest-growing electronics firms owe their eminence to heir heavy emphasis on technical research is completely beside the point. They have vaulted to affluence on a sudden crest of unusually strong general eceptiveness to new technical ideas. Also, their success has been shaped n the virtually guaranteed market of military subsidies and by military rders that in many cases actually preceded the existence of facilities to nake the products. Their expansion has, in other words, been almost otally devoid of marketing effort.

Thus they are growing up under conditions that come dangerously close o creating the illusion that a superior product will sell itself. Having created a successful company by making a superior product, it is not surprising that management continues to be oriented toward the product rather than the people who consume it. It develops the philosophy that continued growth is a matter of continued product innovation and improvement.

A number of other factors tend to strengthen and sustain this belief:

1. Because electronic products are highly complex and sophisticated, managements become top-heavy with engineers and scientists. This creates a selective bias in favor of research and production at the expense of marketing. The organization tends to view itself as making things rather than satisfying customer needs. Marketing gets treated as a residual activity, "something else" that must be done once the vital job of product creation and production is completed.

2. To this bias in favor of product research, development, and production is added the bias in favor of dealing with controllable variables. Engineers and scientists are at home in the world of concrete things like machines, test tubes, production lines, and even balance sheets. The abstractions toward which they feel kindly are those which are testable or manipulatable in the laboratory, or if not testable, then functional, such as Euclid's axioms. In short, the managements of the new glamour-growth companies tend to favor those business activities which lend themselves to careful study, experimentation, and control—the hard, practical realities of the lab, the shop, the books.

What get shortchanged are the realities of the *market*. Consumers are unpredictable, varied, fickle, stupid, shortsighted, stubborn, and generally bothersome. This is not what the engineer-managers say, but deep down in their consciousness it is what they believe. And this accounts for their

concentrating on what they know and what they can control, namely product research, engineering, and production. The emphasis on production becomes particularly attractive when the product can be made at declining unit costs. There is no more inviting way of making money than by running the plant full blast.

Today the top-heavy science-engineering-production orientation of so many electronics companies works reasonably well because they are pushing into new frontiers in which the armed services have pioneered virtually assured markets. The companies are in the felicitous position of having to find, not find, markets; of not having to discover what the customer needs and wants, but of having the customer voluntarily come forward with specific new-product demands. If a team of consultants had been assigned specifically to design a business situation calculated to prevent the emergence and development of a customer-oriented marketing viewpoint, it could not have produced anything better than the conditions just described.

STEPCHILD TREATMENT

The oil industry is a stunning example of how science, technology, and mass production can divert an entire group of companies from their main task. To the extent the consumer is studied at all, the focus is forever on getting information which is designed to help the oil companies improve what they are now doing. Most of them generally try to discover more convincing advertising themes, more effective sales promotion drives, what the market shares of the various companies are, what people like or dislike about service-station dealers and oil companies, and so forth. Few companies seem as interested in probing deeply into the basic human needs that the industry might be trying to satisfy as in probing into the basic properties of the raw material that the companies work with in trying to deliver customer satisfactions.

Basic questions about customers and markets seldom get asked. The latter occupy a stepchild status. They are recognized as existing, as having to be taken care of, but not worth very much real thought or dedicated attention. Nobody gets as excited about the customers in his own backyard as about the oil in the Sahara Desert. Nothing illustrates better the neglect of marketing than its treatment in the industry press.

The centennial issue of the *American Petroleum Institute Quarterly* published in 1959 to celebrate the discovery of oil in Titusville, Pennsylvania, contained twenty-one feature articles proclaiming the industry's greatness. Only one of these talked about its achievements in marketing, and that was only a pictorial record of how service-station architecture has changed. The issue also contained a special section on "New Horizons", which was devoted to showing the magnificent role oil would play in America's future. Every reference was ebulliently optimistic, never once implying that oil might have

some hard competition. Even the reference to atomic energy was a cheerful catalogue of how oil would help make atomic energy a success. There was not a single apprehension that the oil industry's affluence might be threatened or a suggestion that one "New Horizon" might include new and better ways of serving oil's present customers.

But the most revealing example of the stepchild treatment that marketing gets was still another special series of short articles on "The Revolutionary Potential of Electronics". Under that heading the following article titles appeared in the table of contents: "In the Search for Oil," "In Production Operations", "In Refinery Processes", "In Pipeline Operations".

Significantly, every one of the industry's major functional areas is listed, except marketing. Why? Either it is believed that electronics holds no revolutionary potential for petroleum marketing (which is palpably wrong), or the editors forgot to discuss marketing (which is more likely and illustrates its stepchild status).

The order in which the four functional areas are listed also betrays the past alienation of the oil industry from the consumer. The industry is implicitly defined as beginning with the search for oil and ending with its distribution from the refinery. But the truth is that this industry, as all industries, begins with the needs of the customer for its product. From that primal position its definition moves steadily backstream to areas of progressively lesser importance, until it finally comes to rest at the "search for oil".

BEGINNING AND END

The view that an industry is a customer-satisfying process, not a goods-producing process, is vital for all businessmen to understand. An industry begins with the customer and his needs, not with a patent, a raw material, or a selling skill. Given the customer's needs, the industry develops backward, first concerning itself with the physical delivery of customer satisfactions. Then it moves back further to creating the things by which these satisfactions are in part achieved. How these materials are created is a matter of indifference to the customer; hence the particular form of manufacturing, processing, or what have you, cannot be considered as a vital aspect of the industry. Finally, the industry moves back still further to finding the raw materials necessary for making its products.

The irony of some industries oriented toward technical research and development is that the scientists who occupy the high executive positions are totally unscientific when it comes to defining their companies' overall needs and purposes. They violate the first two rules of the scientific method —being aware of and defining their companies' problems, and then developing testable hypotheses about solving them. They are scientific only about the convenient things, such as laboratory and product experiments. The

reason that the customer (and the satisfaction of his deepest needs) is not considered as being "the problem" is not because there is any certain belief that no such problem exists but because an organizational lifetime has conditioned management to look in the opposite direction. Marketing is a stepchild.

I do not mean that selling is ignored. Far from it. But selling, again, is not marketing. As already pointed out, selling concerns itself with the tricks and techniques of getting people to exchange their cash for your product. It is not concerned with the values that the exchange is all about. And it does not, as marketing invariably does, view the entire business process as consisting of a tightly integrated effort to discover, create, arouse, and satisfy customer needs. The customer is somebody "out there" who, with proper cunning, can be separated from his loose change.

Actually, not even selling gets much attention in some technologically minded firms. Because there is a virtually guaranteed market for the abundant flow of their new products, they do not in truth know what a real market is. It is as if they lived in a planned economy, moving their products routinely from factory to retail outlet. Their successful concentration on products tends to convince them of the soundness of what they have been doing, and they fail to see the gathering clouds over the market...

III/SEGMENTING THE MARKET

marked Strategies

10 / Product Differentiation and Market Segmentation as Alternative Marketing Strategies

WENDELL R. SMITH

While contemporary economic theory deals with the nature of product differentiation and its effect upon the operation of the total economy, the alternative marketing strategies available to planners and merchandisers of products have received less attention.

This article compares and analyzes the alternative strategies of product differentiation and market segmentation. The origin of each strategy is traced to diversities in supply and in consumer demand. Several reasons for the emergence of the market segmentation strategy are discussed.

During the decade of the 1930's, the work of Robinson and Chamberlin resulted in a revitalization of economic theory. While classical and neoclassical theory provided a useful framework for economic analysis, the theories of perfect competition and pure monopoly had become inadequate as explanations of the contemporary business scene. The theory of perfect competition assumes homogeneity among the components of both the demand and supply sides of the market, but diversity or heterogeneity had come to be the rule rather than the exception. This analysis reviews major marketing strategy alternatives that are available to planners and merchandisers of products in an environment characterized by imperfect competition.

Diversity in Supply

That there is a lack of homogeneity of close similarity among the items offered to the market by individual manufacturers of various prodcuts is obvious in any variety store, department store, or shopping center. In many cases the impact of this diversity is amplified by advertising and promotional activities. Today's advertising and promotion tends to emphasize appeals to *selective* rather than *primary* buying motives and to point out the distinctive or differentiating features of the advertiser's product or service offer.

The presence of differences in the sales offers made by competing suppliers produces a diversity in supply that is inconsistent with the assumptions of earlier thory. The reasons for the presence of diversity in specific markets are many and include the following:

SOURCE : From *Journal of Marketing,* national quarterly publication of the American Marketing Association, vol. 21, July 1956, pp. 3-8. Wendell R. Smith Alderson and Sessions.

1. Variations in the production equipment and methods or processes used by different manufacturers of products designed for the same or similar uses.
2. Specialized or superior resources enjoyed by favorably situated manufacturers.
3. Unequal progress among competitors in design, development, and improvement of products.
4. The inability of manufacturers in some industries to eliminate product variations even through the application of quality control techniques.
5. Variations in producers' estimates of the nature of market demand with reference to such matters as price sensitivity, color, material, or package size.

Because of these and other factors, both planned and uncontrollable differences exist in the products of an industry. As a result, sellers make different appeals in support of their marketing efforts.

Diversity or Variations in Consumer Demand

Under present-day conditions of imperfect competition, marketing managers are generally responsible for selecting the over-all marketing strategy or combination of strategies best suited to a firm's requirements at any particular point in time. The strategy selected may consist of a program designed to bring about the *convergence* of individual market demands for a variety of products upon a single or limited offering to the market. This is often accomplished by the achievement of product differentiation through advertising and promotion. In this way, variations in the demands of individual consumers are minimized or brought into line by means of effective use of appealing product claims designed to make a satisfactory volume of demand *converge* upon the product or product line being promoted. This strategy was once believed to be essential as the marketing counterpart to standardization and mass production in manufacturing because of the rigidities imposed by production cost considerations.

In some cases, however, the marketer may determine that it is better to accept *divergent* demand as a market characteristic and to adjust product lines and marketing strategy accordingly. This implies ability to merchandise to a heterogeneous market by emphasizing the precision with which a firm's products can satisfy the requirements of one or more distinguishable market segments. The strategy of product differentiation here gives way to marketing programs based upon measurement and definition of market differences.

Lack of homogeneity on the demand side may be based upon different customs, desire for variety, or desire for exclusiveness or may arise from basic differences in user needs. Some divergence in demand is the result of shopping errors in the market. Not all consumers have the desire or the

ability to shop in a sufficiently efficient or rational manner as to bring about selection of the most needed or most wanted goods or services.

Diversity on the demand side of the market is nothing new to sales management. It has always been accepted as a fact to be dealt with in industrial markets where production to order rather than for the market is common. Here, however, the loss of precision in the satisfying of customer requirements that would be necessitated by attempts to bring about convergence of demand is often impractical and, in some cases, impossible. However, even in industrial marketing, the strategy of product differentiation should be considered in cases where products are applicable to several industries and may have horizontal markets of substantial size.

Long-Term Implications

While contemporary economic theory deals with the nature of product differentiation and its effects upon the operation of the total economy, the alternative strategies of product differentiation and market segmentation have received less attention. Empirical analysis of contemporary marketing activity supports the hypothesis that, while product differentiation and market segmentation are closely related (perhaps even inseparable) concepts, attempts to distinguish between these approaches may be productive of clarity in theory as well as greater precision in the planning of marketing operations. Not only do strategies of differentiation and segmentation call for differing systems of action at any point in time, but the dynamics of markets and marketing underscore the importance of varying degrees of diversity *through time* and suggest that the rational selection of marketing strategies is a requirement for the achievement of maximum functional effectiveness in the economy as a whole.

If a rational selection of strategies is to be made, an integrated approach to the minimizing of total costs must take precedence over separate approaches to minimization of production costs on the one hand and marketing costs on the other. Strategy determination must be regarded as an over-all management decision which will influence and require facilitating policies affecting both production and marketing activities.

Differences Between Strategies of Differentiation and Segmentation

Product differentiation and market segmentation are both consistent with the framework of imperfect competition.[1] In its simplest terms, *product differentiation* is concerned with the bending of demand to the will of supply. It is an attempt to shift or to change the slope of the demand curve for the marketing offering of an individual supplier. This strategy may also be employed by a group of suppliers such as a farm cooperative, the members of which have agreed to act together. It results from the desire

[1] Imperfect competition assumes lack of uniformity in the size and influence of the firms or individuals that comprise the demand or supply sides of a market.

to establish a kind of equilibrium in the market by bringing about adjustment of market demand to supply conditions favorable to the seller.

Segmentation is based upon developments on the demand side of the market and represents a rational and more precise adjustment of product and marketing effort to consumer or user requirements. In the language of the economist, segmentation is *disaggregative* in its effects and tends to bring about recognition of several demand schedules where only one was recognized before.

Attention has been drawn to this area of analysis by the increasing number of cases in which business problems have become soluble by doing something about marketing programs and product policies that overgeneralise both markets and marketing effort. These are situations where intensive promotion designed to differentiate the company's products was not accomplishing its objective—cases where failure to recognize the reality of market segments was resulting in loss of market position.

While successful product differentiation will result in giving the marketer a horizontal share of a broad and generalized market, equally successful application of the strategy of market segmentation tends to produce depth of market position in the segments that are effectively defined and penetrated. The differentiator seeks to secure a layer of the market cake, whereas one who employs market segmentation strives to secure one or more wedge-shaped pieces.

Many examples of market segmentation can be cited; the cigarette and automobile industries are well-known illustrations. Similar developments exist in greater or lesser degree in almost all product areas. Recent introduction of a refrigerator with no storage compartment for frozen foods was in response to the distinguishable preferences of the segment of the refrigerator market made up of home freezer owners whose frozen food storage needs had already been met.

Strategies of segmentation and differentiation may be employed simultaneously, but more commonly they are applied in sequence in response to changing market conditions. In one sense, segmentation is a momentary or short-term phenomenon in that effective use of this strategy may lead to more formal recognition of the reality of market segments through redefinition of the segments as individual markets. Redefinition may result in a swing back to differentiation.

The literature of both economics and marketing abounds in formal definitions of product differentiation. *From a strategy viewpoint,* product differentiation is securing a measure of control over the demand for a product by advertising or promoting differences between a product and the products of competing sellers. It is basically the result of sellers' desires to establish firm market positions and/or to insulate their businesses against price competition. Differentiation tends to be characterized by heavy use of advertising and promotion and to result in prices that are somewhat above the

equilibrium levels associated with perfectly competitive market conditions. It may be classified as a *promotional* strategy or approach to marketing.

Market segmentation, on the other hand, consists of viewing a heterogeneous market (one characterized by divergent demand) as a number of smaller homogeneous markets in response to differing product preferences among important market segments. It is attributable to the desires of consumers or users for more precise satisfaction of their varying wants. Like differentiation, segmentation often involves substantial use of advertising and promotion. This is to inform market segments of the availability of goods or services produced for or presented as meeting their needs with precision. Under these circumstances, prices tend to be somewhat closer to perfectly competitive equilibrium. Market segmentation is essentially a *merchandising* strategy, merchandising being used here in its technical sense as representing the adjustment of market offerings to consumer or user requirements.

The Emergence of the Segmentation Strategy

To a certain extent, market segmentation may be regarded as a force in the market that will not be denied. It may result from trial and error in the sense that generalized programs of product differentiation may turn out to be effective in some segments of the market and ineffective in others. Recognition of, and intelligent response to, such a situation necessarily involves a shift in emphasis. On the other hand, it may develop that products involved in marketing programs designed for particular market segments may achieve a broader acceptance than originally planned, thus revealing a basis for convergence of demand and a more generalized marketing approach. The challenge to planning arises from the importance of determining, preferably in advance, the level or degree of segmentation that can be exploited with profit.

There appear to be many reasons why formal recognition of market segmentation as a strategy is beginning to emerge. One of the most important of these is decrease in the size of the minimum efficient producing or manufacturing unit required in some product areas. American industry has also established the technical base for product diversity by gaining release from some of the rigidities imposed by earlier approaches to mass production. Hence, there is less need today for generalization of markets in response to the necessity for long production runs of identical items.

Present emphasis upon the minimizing of marketing costs through self-service and similar developments tends to impose a requirement for better adjustment of products to consumer demand. The retailing structure, in its efforts to achieve improved efficiency, is providing less and less sales push at point of sale. This increases the premium placed by retailers upon products that are presold by their producers and are readily recognized by consumers as meeting their requirements as measured by satisfactory rates of stock turnover.

It has been suggested that the present level of discretionary buying power is productive of sharper shopping comparisons, particularly for items that are above the need level. General prosperity also creates increased willingness "to pay a little more" to get "just what I wanted".

Attention to market segmentation has also been enhanced by the recent ascendancy of product competition to a position of great economic importance. An expanded array of goods and services is competing for the consumer's dollar. More specifically, advancing technology is creating competition between new and traditional materials with reference to metals, construction materials, textile products, and in many other areas. While such competition is confusing and difficult to analyze in its early stages, it tends to achieve a kind of balance as various competing materials find their markets of maximum potential as a result of recognition of differences in the requirements of market segments.

Many companies are reaching the stage in their development where attention to market segmentation may be regarded as a condition or cost of growth. Their *core* markets have already been developed on a generalized basis to the point where additional advertising and selling expenditures are yielding diminishing returns. Attention to smaller or *fringe* market segments, which may have small potentials individually but are of crucial importance in the aggregate, may be indicated.

Finally, some business firms are beginning to regard an increasing share of their total costs of operation as being fixed in character. The higher costs of maintaining market position in the channels of distribution illustrate this change. Total reliance upon a strategy of product differentiation under such circumstances is undesirable, since market share available as a result of such a promotion-oriented approach tends to be variable over time. Much may hinge, for example, upon week-to-week audience ratings of the television shows of competitors who seek to outdifferentiate each other. Exploitation of market segments, which provides for greater maximization of consumer or user satisfactions, tends to build a more secure market position and to lead to greater over-all stability. While traditionally, high fixed costs (regarded primarily from the production viewpoint) have created pressures for expanded sale of standardized items through differentiations the possible shifting of certain marketing costs into the fixed area of the total cost structure tends to minimize this pressure.

CONCLUSION

Success in planning marketing activities requires precise utilization of both product differentiation and market segmentation as components of marketing strategy. It is fortunate that available techniques of marketing research make unplanned market exploration largely unnecessary. It is the obligation of those responsible for sales and marketing administration to

keep the strategy mix in adjustment with market structure at any point in time and to produce in marketing strategy at least as much dynamism as is present in the market. The ability of business to plan in this way is dependent upon the maintenance of a flow of market information that can be provided by marketing research as well as the full utilisation of available techniques of cost accounting and cost analysis.

Cost information is critical because the upper limit to which market segmentation can be carried is largely defined by production cost considerations. There is a limit to which diversity in market offerings can be carried without driving production costs beyond practical limits. Similarly, the employment of product differentiation as a strategy tends to be restricted by the achievement of levels of marketing cost that are untenable. These cost factors tend to define the limits of the zone within which the employment of marketing strategies or a strategy mix dictated by the nature of the market is permissive.

It should be emphasized that while we have here been concerned with the differences between product differentiation and market segmentation as marketing strategies, they are closely related concepts in the setting of an imperfectly competitive market. The differences have been highlighted in the interest of enhancing clarity in theory and precision in practice. The emergence of market segmentation as a strategy once again provides evidence of the consumer's pre-eminence in the contemporary American economy and the richness of the rewards that can result from the application of science to marketing problems.

Conclusion

11 / Analyzing Foreign Opportunities

RAPHAEL W. HODGSON AND HUGO E. R. UYTERHOEVEN

Managers contemplating foreign ventures can determine the relative profitability of each through the use of a new analytical approach—operating margin analysis. This technique permits the market to select the firm and assures the establishment of a plan which is consistent with the objectives of the parent firm.

In this article

We will first describe why the magnitude and rapidity of economic change in industrialized areas enhance the danger of creating ill-conceived ventures, a danger compounded by the inadequacy of conventional methods of analysis. We will then proceed to describe a new approach, which we call opportunity analysis. Analysis of the operating margin and its major components, involuntary costs and discretionary expenses, will shed light on conditions in a particular industry abroad and on the competing participants. With this information management can reach useful conclusions regarding its operating flexibility and the looseness or tightness of competition, which is important because these factors affect the ease and profitability of entry.

If entry appears both feasible and desirable, it is necessary to design the future scope and strategy of a venture to assure survival and success. Here the principal criterion is the position that the company would have relative to the industry leaders. Often, as we shall see, the role of challenger will enable a foreign venture to select its own battleground, thus enhancing both its operating flexibility and chances for success. In any case, a foreign venture will have to anticipate future changes and contingencies, the magnitude and timing of which can be predicted.

Next we will discuss the critical industry conditions that must be taken into account. Five elements are especially important:

1. *Differences in financial charges can cause wide variations in profitability, even within the same industry.*
2. *Capacity-building requirements have to be watched carefully*
3. *The importance of specialization and concentration are particularly crucial elements.*
4. *Product policy requires a great deal of flexibility.*

SOURCE : From *Harvard Business Review*, vol. 40, March-April, 1962, pp. 60-79.
Raphael W. Hodgson: Management Services Division, Arthur D. Little, Inc. Hugo E. R. Uyterhaeven: Program Director, International Marketing Institute's Program in International Business for U.S. Managers.

5. *Distribution obstacles or opportunities have to be analyzed in detail and on a country-by-country basis.*

The importance of international comparisons of operating margins needs to be stressed. Operating margin analysis helps in avoiding the inherent dangers of making false analogies by transferring industry reasoning from one country to another. Most significantly, it also allows construction of an analytical grid comparing the various foreign opportunities with those at home.

By way of conclusion we shall focus on the need for consistency in planning in foreign ventures, both in terms of immediate and ultimate goals and of the parent company's capabilities and willingness.

One of the most significant business trends of our time is the entry of many United States manufacturing companies into foreign markets. How should the managements of these companies size up their opportunities abroad? The approach commonly followed is to analyze present market potentials and assess the prospects of future growth. On the face of it, this approach may seem rational—and certainly it provides *part* of the data top executives need. By itself, however, it is inadequate. As a basis for decision making it may even lead to more wrong answers than right ones. Here are just a few illustrations to make our point:

The European market for an important line of electronics systems was growing rapidly, and firms participating in this market were enjoying large profits. A U.S. company contemplating entry into this business possessed the skills and resources necessary to gain a competitive market position. At first glance, the company's prospects for doing well looked excellent according to conventional criteria.

Yet closer examination showed that high levels of demand relieved firms of the need to offer a considerable amount of customer service and special systems work normally required in more competitive situations. Given the absence of these sales expenses, profit margins were not as high as one would expect in this industry. Also, product shortages greatly reduced the levels of finished goods and work-in-process inventories, thus requiring less debt and equity capital. Profitability in this business could therefore be expected to decline rapidly as maturing conditions imposed increased sales expenses and capital requirements.

In the late 1950's in Europe, a capacity shortage prevailed in an important plastic. In addition, consumption appeared to be increasing at over 20% per year, and prices were very high relative to entry expenses and plant investments. Most firms felt that the problems of raw material supply and "coproduct" disposal, which are normal to a chemical business, were surmountable in that the huge demand and high prices for the plastic relieved

management of having to secure either the most economical source of raw materials or the most appropriate distribution for the coproducts. Consequently, the requirements for entry appeared less forbidding than in most other chemical product areas.

It was not surprising, therefore, that the field was entered by almost every candidate capable of doing so, and that capacity mushroomed all over Europe. Worse was to happen. The marginal cost of this product was low, yet capital investment was very high; with a considerable surplus for export already available in the United States, and with low European tariffs, dumping by U.S. producers occurred on a large scale. Today, the compounded effect of dumping by American producers and of large additions to capacity in Europe has collapsed prices to such an extent that a large number of the new business operations will probably become questionable ventures, if they have not already.

Profits were low among many European manufacturers of an important class of electric components, even though the market was a dynamic one. Most firms were under price pressure from two major producers. Investigation revealed that both producers had standardized their production around three basic types of products, thereby achieving higher scales of production resulting in much lower costs. This enabled them to enjoy considerable profits, while keeping prices low. Their low prices even enabled them to extend their market into areas where their products appeared overengineered or extravagant.

Competitors, although still holding the major market share, were making their profits largely on special items which were job-shop runs, while incurring losses on their standard offerings. There was clearly an opportunity for entry by developing a product policy similar to that of the industry leaders and sustaining the necessary production and distribution system. However, this opportunity would not have been suggested by a conventional market analysis.

In 1959 many firms entered the rapidly growing British refrigerator industry on a small scale. At that time, typical high profitability conditions prevailed in the refrigerator business along with a considerable amount of resale price maintenance. Plants of small scale were common, even among the leaders. Since then, however, imports, over-capacity arising from other new entrants, a break in consumer demand, and a break in price maintenance have brought prices down considerably. This trend eluded forecasters using the standard tools.

In short, management's investigation of foreign business opportunities should go beyond judgments of market growth if it is to recognize the opportunities before they become obvious to the world at large, and is to spot dangerous situations before investments are unwisely committed. Special reliance will have to be placed on a financial, economic, and operational analysis of competing companies as well as on the technical and

economic development of the field itself. We call this broader type of evaluation *opportunity analysis.*

PURPOSES AND USES

Opportunity analysis provides data and ways of looking at data that help top management with its most important decisions regarding foreign operations. More specifically, opportunity analysis helps executives to recognize:

1. *The limits within which a firm must operate abroad and plan its foreign strategy*—These quantitative limits are essential guideposts in defining the tightness or looseness of competition, which is the principal criterion of whether there is a margin (*a*) for the expense of getting a business started and of sustaining the running expenses, and (*b*) for profits.

To recognize and analyze these limits for any given industry is especially important in international operations for two reasons. First, the limits often differ markedly among countries. Failing to appreciate this, companies often look at Europe or another region "as a whole" and thereby draw false analogies. Secondly, these limits change over time. Management often ignores such changes, particularly when planning foreign ventures under currently prevailing high profitability conditions. In many European industries, tighter competitive conditions appear inevitable; in fact, this change has already occurred for some products and has caught several producers off guard. Opportunity analysis assists in determining *when* and *to what extent* the limits are likely to change.

2. *The means of competition in a foreign country*—Only by analyzing how local participants compete is it possible to determine how a foreign entrant can most successfully participate regardless of whether or not he produces locally or exports. Opportunity analysis ensures identification and evaluation of alternatives and avenues which may lead to success. Even within the same industry, competitive methods vary significantly among countries. Therefore, the recognition of their impact on capacity planning, pricing policy, distribution strategy, financial planning, and so on, is vital before clear entry and participation requirements for a foreign venture can be formulated.

3. *The critical elements of the industry*—We use the phrase "critical elements" to refer to important factors in operations that vary, not only from industry to industry, but also within the same industry from country to country. For example, variations in depreciation policies, working-capital requirements, utilization of debt, capacity building, operating control, inventory control, product policy, and distribution requirements may be significant.

Opportunity analysis is a valuable tool in appraising the foreign ventures of both established companies and newcomers. It helps the established firm reappraise its operations and judge the merits of expansion or diversification

opportunities, and it serves the firm seeking foreign entry for the first time, whether by way of a foreign distributor, licensee, manufacturing partner, suitable acquisition, or an entirely new operation. Opportunity analysis aids, not only in judging the value of the products or technology one has to offer (thus possibly increasing one's bargaining power in negotiation with potential foreign associates), but also in judging the competitive standing of potential associates and evaluating the capabilities of foreign competitors. It is, furthermore, of value to security analysts and underwriters in appraising foreign industry conditions as well as the relative strengths of competing participants.

Actually, opportunity analysis would be worth following here in the United States if businessmen were more dependent on formal analysis. At home, however, they can blend investigations, analysis, and judgment with an acute, fine, and, at times, intuitive sense—often the result of many years of experience. Abroad, the American businessman is without this guide; considerable and vigorous analysis, therefore, must take its place.

Coping With Change

Opportunity analysis is most vital in industrialized areas (*a*) if economic and competitive conditions are expected to change markedly, and (*b*) if these changes are likely to occur very quickly. Both the amount and the rapidity of economic change magnify the danger of missing opportunities and making unsound investments. This is the situation in European industry today for the following reasons:

Extraordinary growth rates (often as high as 30% per year) enable large-scale production in several consumer and industrial sectors, thus reducing manufacturing costs significantly. Firms lagging behind in market share may find themselves priced out of the market.

High growth rates severely tax a firm's financial ability. Yet if it fails to concentrate its resources on keeping up with the growth requirements of its industry, it may sacrifice its future profitability.

Financial burdens will be augmented by the merging of hitherto separate national markets. Until now, industries in each nation have usually been dominated by that nation's own companies, and the narrowness of national markets has frequently limited participation to very few firms. But in the years ahead economic unification will greatly widen the market size while simultaneously exposing predominantly national companies to competition from their foreign neighbors. The impact will be felt both in production and in marketing. For example:

The European chemical industry has hitherto constructed its productive capacity in relatively small steps (in contrast to the large capacity additions common in the U.S. chemical industry). A major reason for this difference is that in Europe, with participation in each country limited to a few firms,

the risk of forfeiture of opportunity by not engaging in a capacity race has not been too great. This risk, however, will become more acute after the merging of national markets. That it will increase financial burdens, create unused capacity, and aggravate price instability seems all too evident from the U.S. experience.

The task of dislodging national companies from their dominant marketing positions (which is particularly difficult because of structural distribution differences and varying national characteristics) may impose even more severe financial burdens on outsiders. We have already noted that under high growth rates it is a major achievement. This strain will be greatly compounded if a rapid exploration of continental opportunities requires a firm to multiply its position in as many markets as there are nations. In fact, the magnitude of such a task appears to exceed the financial and management resources of a great many European firms.

The need for large-scale plants, the search for low-cost production sites, and the difficulty of breaking into national distribution structures may lead to a considerable number of mergers and acquisitions, thus creating truly continental firms. As a result, companies which continue to limit their activities to their own national market may find themselves at a cost disadvantage. Their local distribution strengh will have to be immense to withstand price competition by foreign entrants. However, these high-cost producers may find themselves becoming desirable objects of acquisition by more efficient outside concerns seeking distribution outlets.

Because of differences in product concentration, market sizes, vertical integration, and so on, considerable variations in the cost of materials and parts prevail from country to country. Thus:

The French washing machine industry pays a higher price for its components than does the Italian washing machine industry, which in turn pays more than the German and British industries do.

British and French refrigerator manufacturers as a whole pay high prices for their compressors, largely because too many of them make their own compressors in small volumes instead of purchasing the very low-cost units made in Denmark and Italy.

The French cathode ray tubes are more expensive than elsewhere because of the lack of price competition among the two big domestic producers, both of whom have important captive television manufacturing outlets.

These differences, which have hitherto been buttressed by national tariffs, are bound to disappear with the progressive reduction of tariff barriers, for purchasers will be able to select the lowest cost suppliers more freely.

The application of technology has been accelerated by international interchange. Thus, a receiving country may go through a technological evolution in five years which took twenty or so years in the country which pioneered in the development. The compression of a long history of U.S. technological change into a short time period in Europe stimulates the

already rapid economic growth but also compounds it by creating considerable flux in the product lines of many companies and markets.

Ill-Conceived Ventures

The conditions of change just described allow sizable profits to many corporations today. However, at the same time they invite many new entrants. The additions to capacity may create surpluses of major proportions which, coupled with the coming adjustments required to survive in large unified markets, spell a tightening of competitive conditions. Indeed, the danger signals are already apparent in two of Europe's most dynamic industries—plastics and domestic appliances.

Many a participant will be incapable of withstanding the impact of the new competition. Unfortunately, this does not seem to be appreciated. Current profitable conditions hide crucial weaknesses; they invite complacency in that, because ventures are still so profitable, managements are not disposed to take steps to ensure their future. Conventional methods of analysis do not sufficiently focus on the danger signals or spot the real opportunities.

Errors in judgment are aggravated by the currently fashionable trend to establish operations in Europe. Often a businessman sees a market for his product and is impressed by its growth rate. However, he is pressed for time as he hears competition announcing new ventures; and since he feels he cannot afford to wait, he directs that an arrangement be made right away. Perhaps the contemplated operation is not the best one, but he hopes this can be adjusted afterwards; the important thing, it seems to him, is to be in the market on time. He typically assesses the profitability of his contemplated operation by making cost analogies with his existing American operation, allowing for European plant scales and labor rates. The difference between his cost forecast and prevailing price levels usually appears to justify the investment.

Our businessman will, to be sure, ask whether this difference can be maintained in years to come. He expects his future costs to decline with increasing scale of operations. As for future prices, a look at the industry price trend seems to provide him with as good a guess as any. By using this highly respectable approach, he concludes, in most cases, that his costs will decline faster than the industry price trend. The resultant ever-expanding profit margin (how common a phenomenon in company forecasts!) augurs very healthy black figures for the years ahead. Such unrealistic optimism is the cause of many ill-conceived foreign ventures.

At the other extreme, and equally dangerous for sound international business planning, some managements are inclined to exaggerate foreign difficulties and dangers, especially by ascribing inordinately severe price declines to the economic integration process. Opportunity analysis, by *identifying* and *quantifying* the crucial competitive conditions abroad, enables

the businessman to put a ceiling on unrealistic optimism and a floor under exaggerated pessimism.

OPERATING MARGINS

A vital tool in opportunity analysis is *operating margin analysis*. The "operating margin" in a business is defined for the purposes of the following discussion as the difference between the sales price and the cost of materials purchased. (For example, in January 1960 a French manufacturer paid the equivalent of $66 for materials that went into a refrigerator which he sold for the equivalent of $101. His operating margin thus amounted to $35.) It is the margin within which a firm will have to operate, i.e., manufacture, sell, pay for research, conduct all other corporate activities, and make a profit.

In planning foreign ventures, operating margin analysis enables management to reconcile its basic manufacturing, marketing, and growth plan within the price-materials cost limits imposed by foreign competitive environments. It ensures that a venture meet the basic conditions of viability, that the operation of a business be carried out, and that the prevailing prices be met.

We have found it convenient to express the operating margin as a percentage of the cost of materials purchased. Thus, the operating margin for the French refrigerator just mentioned would be (sale price—materials cost) ÷ material cost = $35 ÷ $66 = 53%.

Clearly, the operating margin concept is not new. It is often referred to as "value added". It should not be confused with a common accounting usage, according to which operating margin constitutes the difference between sales price and cost of goods sold. This accounting definition has its usefulness in financial statements but is only of limited value for planning management strategy.

Framework of Use

What is novel about our concept is the framework in which we suggest that it be used. Simple in principle, operating margin analysis is complex in its application and interpretation. But in practice we have found the resulting conclusions to be straightforward and revealing.

What makes the approach so useful is that it defines the condition of an *industry* and not just of an individual firm. The margin limits are almost identical for all competing participants in a given country because each sells his products competitively and buys his materials at approximately the same price. Variations in margin within the same product line do not hinder the approach, but invite investigation as to the reasons for the difference. Likewise, different degrees of integration among companies can be reduced to a common denominator by using one of the least-integrated firms as a base

and segregating the additional activities of the other participants as separate "businesses".

The operating margin concept is also helpful because it keeps management from placing excessive emphasis on the accounting statements of established firms. Accounting principles leave companies great flexibility, especially in allocating expenses, even in the United States, thus making "true" profit a rather elastic notion. The correct profit figure becomes even more elusive in foreign countries with their different accounting practices, tax laws, disclosure regulations, and so on.

In short, the operating margin as we conceive it is an essential and highly exact element in corporate planning. It is highly exact because its two base points always remain unobscured and untouched by either accounting convention or company practices. Both the selling price and the cost of materials purchased can be determined objectively. In most cases they are common knowledge. If not, they can be readily determined either through trade channels or with the help of an engineer familiar with the product requirements.

Treatment of Costs

The operating margin becomes particularly useful when its two totally different components, involuntary costs and discretionary expenses, are analyzed. EXHIBIT 1 indicates how the operating margin and its components can be obtained.

Involuntary expenses arise from the nature of the firm's business, its scale of manufacturing, the types of processes used, and the degree of product specialization or standardization that has been achieved. They consist mainly of minimum manufacturing costs; they cannot be eliminated unless a firm cuts production. Therefore, they have to be incurred by everyone in the industry. Their level can be recognized by an engineer who is experienced in the product line and manufacturing processes. He also can develop, through careful product appraisal, a schedule of costs for various volumes of production and various manufacturing methods. Thus, relative changes in involuntary costs resulting from volume increases can be predicted with reasonable accuracy.

While involuntary expenses normally constitute the difference between cost of goods sold and cost of materials purchased, there are exceptions. For example:

Tooling expenses, though usually included in the cost of goods sold, are really discretionary expenses.

Manufacturing costs which are not absolutely necessary but which may add desirable features to the product line are also discretionary expenses, even though included by accountants in the costs of goods sold.

Discretionary expenses allow a foreign venture to fulfill its marketing and

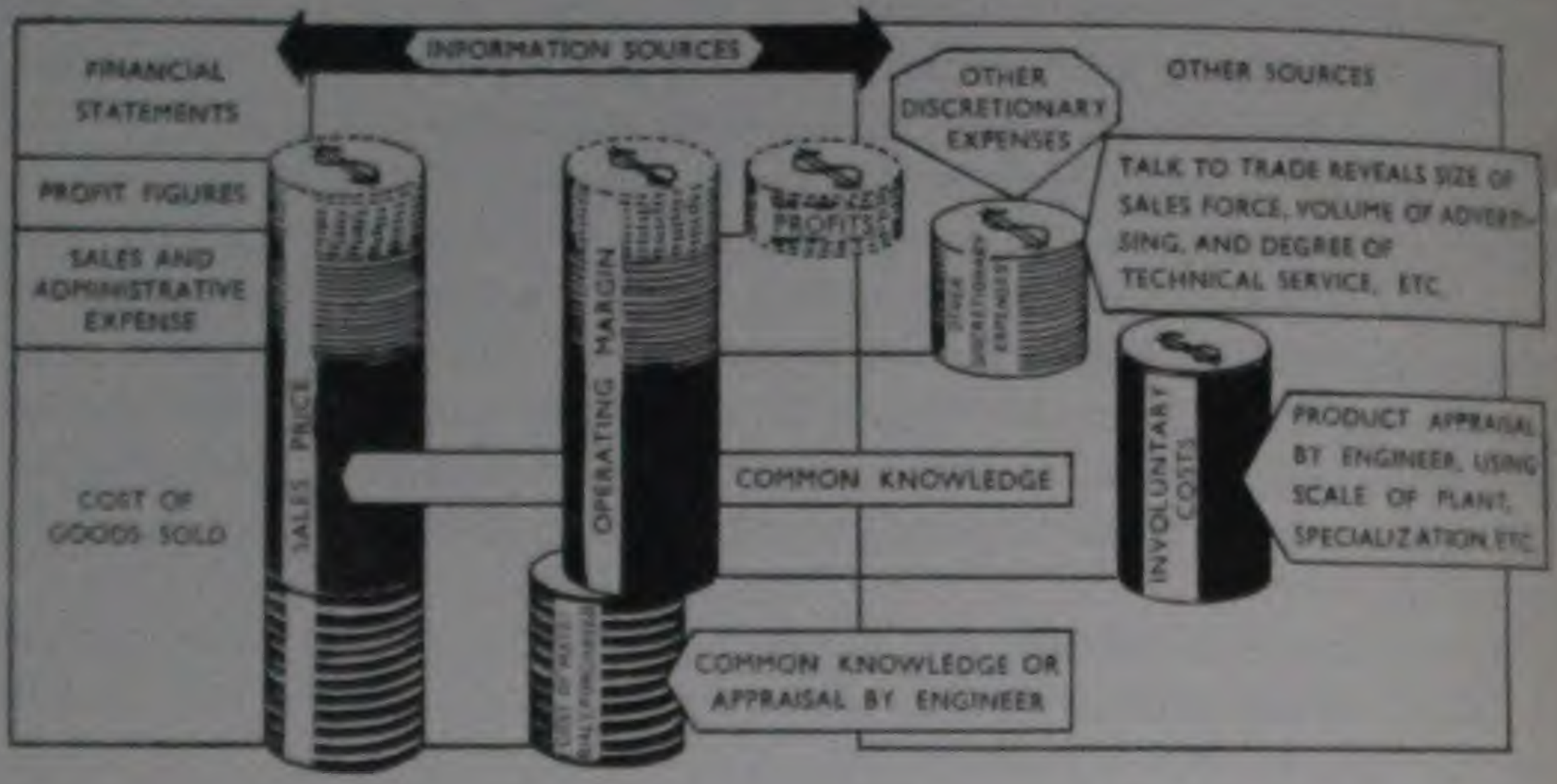
development objectives. Within the framework of competitive conditions, a firm has a certain latitude in determining which and how many discretionary expenses it wants to incur. Corporate strategies among firms vary chiefly because managements put their discretionary money to different uses. One firm may wish to make large profits for distribution to the stockholders or for retention to finance further expansion or diversification. Another firm may direct discretionary expenses toward product development, upgrading of quality, and tooling arising from frequent model changes, or it may incur discretionary expenses to strengthen its marketing position by establishing distribution outlets, creating brand loyalty, improving service to customers, and so forth. Still another firm may surrender discretionary money to reduce its prices.

Discretionary expenses are the lifeblood of a business. They often qualify as true economic investments and should be considered as such even though they are entered into accounting statements as expenses and not as assets. In terms of a company's long-term competitive strength, money invested in building up the distribution position or in creating product differentiation may be no less important than money invested in fixed plant and machinery. During periods of rapid growth, management often emphasizes increases in productive capacity while ignoring discretionary expenses of an investment nature. With the maturity of the industry, however, the emphasis usually shifts from the "capacity to make" to the "ability to sell," thus penalizing companies which in earlier years ignored discretionary expenses for marketing.

Because discretionary expenses of an investment nature in a firm's income statement (in contrast to fixed-asset investment) reduce current profits substantially, a careful analysis of these costs is needed if low profits (or even accounting losses) in growth industries are to be interpreted correctly.

Actually, profits are considered to be part of a firm's discretionary area in our analysis. This is because profit levels are so highly dependent on the types and amounts of other discretionary costs which management needs or wants to incur. In fact, retained profits to be used for further expansion are quite similar to discretionary expenses of an investment nature. On the other hand, rigid profit levels imposed by the need to maintain or increase dividends may reduce other discretionary uses of the money, possibly with perilous consequences.

EXHIBIT 1. DETERMINING THE OPERATING MARGIN



NOTE: The method of determining an operating margin and its components combines financial analysis with a variety of other sources. By using several base points such as price lists, quotations of materials cost, information obtained by talking to men in the trade, and product appraisals by an experienced engineer, a surprisingly accurate picture can be obtained.

APPRAISING COMPETITION

Ordinarily, management wants to be sure that a new venture will generate adequate resources for growth and be able to sustain itself for a period of years. The enterprise must, therefore, be able to live within the prices imposed by competition and still generate a sufficiently wide operating margin to achieve growth. For this reason, in determining entry and participation requirements of a foreign venture it is vital to analyze its position relative to the industry leaders. By considering the involuntary costs and discretionary expenses of the leaders, management can predict future price trends. Turning then to the new venture, it can assess its relative capacity to compete and estimate its ability to pay for the necessary discretionary expenses of an investment nature that will be needed to achieve a viable position in the industry.

Analysis of involuntary and discretionary expenses thus enables a firm to plan for possible contingencies by estimating the extent to which industry leaders may be able to lower prices. These reductions will primarily hinge on (*a*) the lowering of their involuntary costs; and (*b*), as an industry moves to maturity, the extent to which achievement of product and marketing objectives allows the leaders to lower their discretionary expenses. Even though industry leaders will not in all cases exploit these advantages fully, it is necessary in planning a foreign venture to determine whether it will be able to survive under the most adverse eventuality.

Lowering Involuntary Costs

In a dynamic industry, characteristic of so many in Europe today, volume is the prime determinant of the operating margin. Larger scales of production reduce involuntary costs, enabling industry leaders to lower prices. Here is a case in point:

In France, the largest firms in the refrigerator industry make 150,000 units a year and operate within a margin of 50%, while in Germany the leading manufacturers have achieved a volume of 400,000 units per year and are able to operate more profitably within a margin of only about 35%. A manufacturer in Germany making only 150,000 refrigerators a year would clearly be the victim of a price-cost squeeze; indeed, precisely this condition led to the recent withdrawal of a major German electrical manufacturer and of one of the largest U.S. firms.

The extent as well as the timing of price reductions can be fairly accurately predicted by analyzing the leader's involuntary costs and by establishing a schedule of his costs for various increases in volume that can be anticipated with market growth. Price declines will often depend not only on increases in the scale of manufacture of a single product, but also on increased production volumes of similar products. In such cases an appraisal should encompass those products as well as the one of main concern.

When these assessments of future price declines, and hence of lower operating margins, are in hand, management is likely to have some interesting questions of strategy to consider. For one thing, a manufacturer contemplating entry into a business in a less mature stage of development must anticipate the conditions under which he could be the victim of a price-cost squeeze. This contingency will occur if prices drop faster than a company's ability to lower costs, which could happen if the industry leaders grow faster than anyone else. Should a price-cost squeeze develop, management may have to incur losses and match the price reductions in order to maintain its relative market share. Otherwise, it may not achieve sales levels which justify increasing its plant scale, to the point where this would ultimately bring the venture's costs in line with the costs of industry leaders.

If no such sacrifice is made, the decline in sales volume will result in even higher involuntary costs. These in turn will reduce the margin available for discretionary expenses and will push management into a vicious circle of still further concessions in the market. The venture will soon have to surrender its growth objectives. Next it will have to abandon its marketing objectives—and from that point on the downward cycle will be repeated, culminating in the loss of the business.

It is therefore essential to establish entry goals, such as market-share objectives, and to decide what production and sales efforts are necessary to achieve them. This will help to ensure that the venture will generate

adequate resources at least to sustain its position relative to the industry leaders.

Cuts in Discretionary Expenses

During rapid growth periods, companies are likely to make substantial discretionary expenses of an investment nature—e.g., outlays to establish the product, to strengthen distribution, and to finance expansion. As the growth slackens or as objectives are achieved, however, fewer discretionary expenses of this type will be required, thus freeing the money for price reductions. The magnitude of this drop can also be predicted through operating margin analysis, although it is more difficult to foresee its timing.

High discretionary margins are also vulnerable when competitors lower their profit margins or undertake less expensive marketing methods and resort to price cutting in order to gain a larger market share. Analysis of discretionary expenses will reveal the magnitude of such potential price reductions.

During periods of substantial excess capacity, the temptation may develop to make sales so long as this will cover out-of-pocket costs, resulting in a major price break. Such conditions, however, cannot last indefinitely. As demand catches up with capacity, prices will usually return to a level at which the most efficient industry leaders can still make a reasonable return on their investment.

Conditions of Entry

Often overlooked is the fact that a high rate of growth does not necessarily make for profitable business opportunities. Indeed, dramatic foreign growth rates have often obscured the dangers of low profitability and the difficulty of entry. What is more, even conditions of high profitability may obscure formidable obstacles to foreign entry.

A look at the operating margin provides a first indication. A company experienced in its industry, and thus knowing how much it requires to manufacture, pay for research, sell, and so forth, is able to judge fairly easily whether the operating margin in a foreign industry is either "narrow" or "wide". Such an evaluation is often facilitated—as will be explained later in this article—by using an analytical grid which compares operating margins of the same industry in different countries.

A wide operating margin indicates that a new venture can incur high levels of involuntary and discretionary costs. As would be expected, the margin tends to be wide when:

Even the industry leaders have a comparatively low scale of output.

The industry leaders have high discretionary expenses or cash requirements for marketing, product development, construction of new capacity, or diversification programs.

There is insufficient competition.

The industry leaders have priced their products to maximize their profits even though this induces smaller competitors to use minor price reductions as a competitive weapon in furthering sales.

The leaders are inefficient manufacturers or marketers.

Narrow operating margins, on the other hand, reduce a company's flexibility and are significant hurdles for foreign entry, regardless of whether "tight" or "loose" competitive conditions prevail. A tight industry will be characterized by relatively low profits for the industry leader, while loose competitive conditions permit satisfactory profits to both leaders and followers. It is important to recognize, however, that both loose and tight conditions are possible under a wide as well as under a narrow operating margin.

Combinations of Conditions

(1) A *narrow* operating margin in an industry usually results in *tight* conditions, allowing only few discretionary expenses (including profits) after involuntary costs have been incurred. To illustrate:

The German refrigerator industry has margins only 30% to 40% above materials costs. Two giant firms are dominating the field. The product lines of both firms consist of stripped-down models. Manufacturers engage in little merchandising, maintain minimal sales forces, offer only limited service, and allow low distribution discounts based on the quantity shipped. The overriding emphasis is on price, effectively forestalling entry by newcomers and threatening the profitability of small followers.

(2) Narrow operating margins also permit loose competitive conditions. For instance:

The German radio and television industry operated in 1959 within a narrow operating margin, but because of plants of large scale most participants experienced generous profits. In spite of this high profitability, the narrow margin imposed formidable entry goals for a new venture in terms of production volume and of market-share objectives. Last year, the industry moved to tight competitive conditions as participants used part of their discretionary profit money to cut prices.

(3) An industry enjoying a *wide* operating margin may nevertheless experience fierce competition, resulting in *tight* conditions. Given the levels of involuntary costs as well as the discretionary expenses required to compete effectively, profitability may be low. To illustrate again:

The French refrigerator industry is, in spite of its higher operating

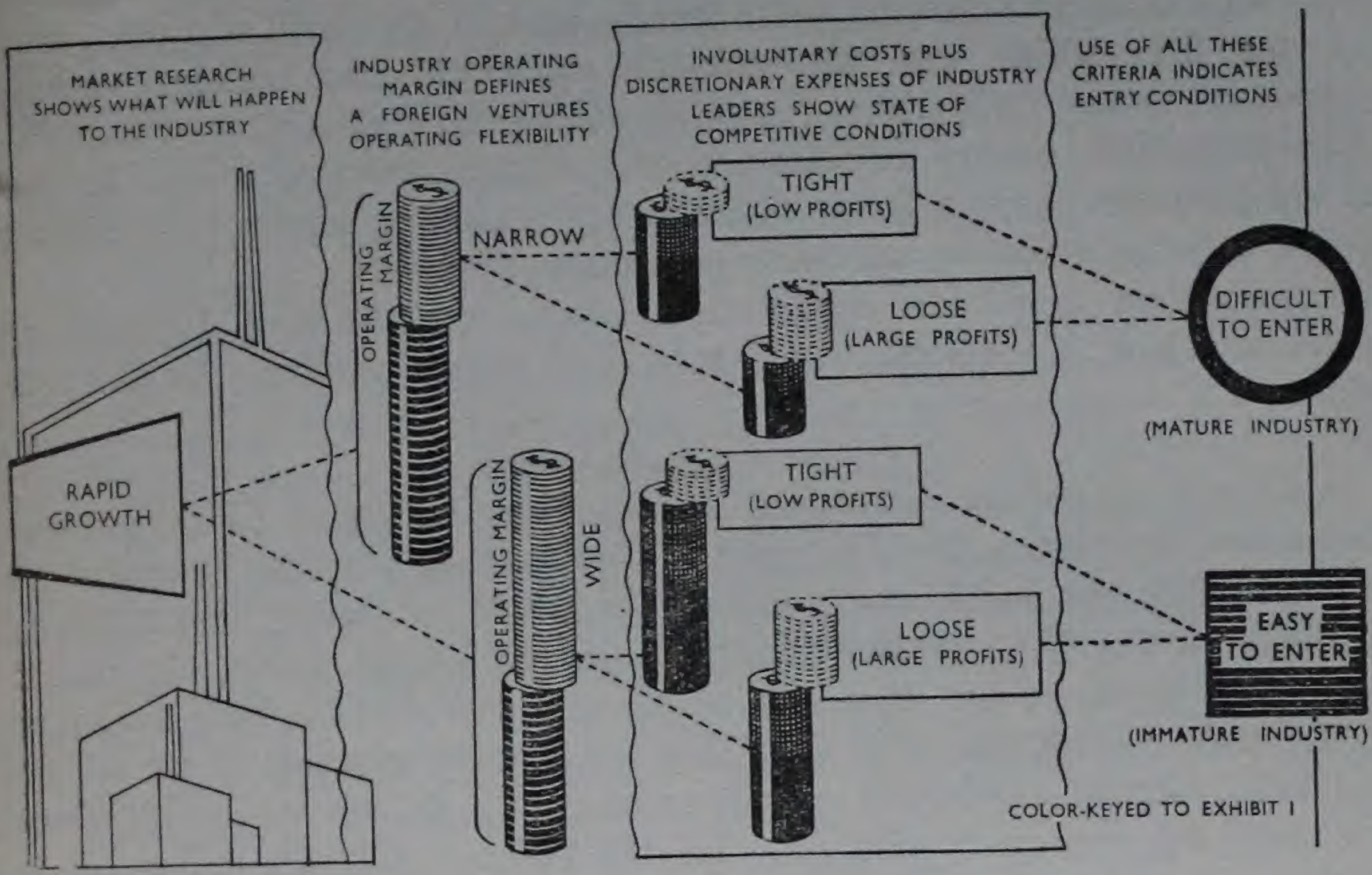
margin, almost as competitive as its German counterpart. The difference in margin is almost entirely absorbed by higher involuntary costs (due to smaller plant scales) and higher discretionary expenses (in view of limited distribution channels). One large firm selling stripped-down products at a low price (much as German firms are doing) is competing with other firms selling better made models at a premium through their own captive distribution channels and engaging heavily in retail promotions.

(4) On the other hand, in Europe there are still many industries with *wide* operating margins and loose competitive conditions—what might be called immature industries—in which entry is not only relatively easy to achieve but may also prove highly profitable. However, timing is most important because an immature, loose industry may rapidly move to highly competitive, tight conditions. For example:

In 1960 the washing machine industry in both Britain and Germany experienced wide operating margins under loose competitive conditions. Each market was dominated by one large company which had achieved maximum economies of scale in production. However, in both cases the leading company was not seriously challenged; and, therefore, it was able to maintain relatively high price levels. Because of low involuntary costs the leader in each market clearly was able to retaliate quickly and effectively against challengers, thus changing the competitive conditions from loose to tight.

In sum, experience shows that opportunities and difficulties in *entering* a foreign industry are more a function of the magnitude of the operating margin than of the profitability of industry members. A wide operating margin can provide a better opportunity for entry than a narrow operating margin *whether the industry leaders are profitable or not.* For instance, the French refrigerator industry, despite its lack of profitability, probably provided an easier entry opportunity than did the German television industry. On the other hand, a profitable industry with narrow operating margins may be very difficult to enter. These combinations of conditions and their implications are summarized in EXHIBIT II.

EXHIBIT II. ANALYZING THE CONDITIONS OF ENTRY



Choosing a Battleground

The most important condition of entry is that the company's initial marketing objectives create discretionary margins which are large enough to sustain its growth objectives. Recognizing the importance of maintaining the venture's position relative to industry leaders, management may see that it is not sufficient merely to match their discretionary expenses; it may be necessary to exceed the other firms' expenses substantially. For example, if there is a shortage of distribution channels, the capture of which is critical to achieve success, management may have to spend more than competitors on the product lines, services, or promotion needed to secure these channels.

However, the wisest strategy may be to undertake efforts that do *not* duplicate the programs of industry leaders. The chances to achieve success are often enhanced if management selects its own battleground instead of imitating what the established firms are doing. If so, the important thing still is to make sure that the new approach is consistent with the discretionary margin it will provide.

One area where a new venture may have considerably more flexibility than industry leaders is pricing. Often, industry leaders wish to maximize their profits by holding the line on prices. This will often be done at a price level that gives considerable discretion even to followers with higher involuntary costs. As a result they can use small price decreases as a competitive weapon to increase their market share and thereby their total profits. In the end, their constant nibbling at the leader's position results in a loss of his market share. For example:

In 1960, competitive conditions in the German and the British washing machine industries were very loose largely because each field was dominated by one firm which was not seriously challenged and because washing machines, unlike refrigerators, justified considerable discretionary expenditures in service, quality manufacture, and demonstration at retail. Instead of matching the leader's heavy discretionary marketing expenses, an entrant might have been able to use price reductions effectively.

Emphasis on price under conditions like these can save many discretionary expenses which, if incurred, would have little impact anyway. To illustrate again:

A German subsidiary determined its advertising budget by using the same percentage of sales as its U.S. parent. The subsidiary spent the budget in approximately the same way. Indeed, its whole marketing approach was a mirror of the U.S. parent's program. In the United States, the parent company was one of the leaders in its industry and was, therefore, reluctant to use price concessions. The subsidiary was equally reluctant to use pricing and relied almost exclusively on advertising, even though its market share was only 5% compared with 45% for the German industry leader. It is hardly surprising that top company executives did not consider the subsidiary's operation entirely successful.

Analysis of the discretionary expense span of industry leaders will also show if a new venture can maintain or improve its relative position by incurring fewer discretionary costs. For example, it is not unusual to see leaders dissipate their resources through unwise diversification, excessive component manufacture, and so forth. These wastes need not be duplicated. Also, a venture may be able to save on discretionary expenses if it is a subsidiary. It may be able to cut down on such items as research and development costs, tooling costs, and design and engineering expenses if the parent corporation has done the needed work in these areas.

CRITICAL CONDITIONS

While fitting the manufacturing, marketing, and growth plan of a business in the limits established by the competitive environment is important, it is not the only task that demands top-management attention. A foreign venture may be unsuccessful if other critical elements are not given equal consideration. We refer to a series of conditions that not only differ markedly among industries, as is well known, but also vary greatly within the same industry from country to country. At the outset of a foreign venture, therefore, it is imperative that management (1) recognize these essential industry conditions and (2) analyze the relevant differences between the United States and the host country. Failure to do so may lead to incorrect assumptions as to a venture's future discretionary margin, resulting

in turn in an insecure "plan" or design that is often beyond correction later on by managers in trouble spots. Five industry conditions deserve particular attention.

Impact of Financial Charges

Financial conditions often vary remarkably among countries because of major differences in (1) depreciation policy, (2) working-capital requirements, and (3) utilization of debt leverage.

A recent study provides a case in point. We observed that three companies, one in the United States, one in France, and the other in Germany, were operating under almost identical conditions in the same growth industry. Even though all three were generating approximately the same cash per dollar of gross plant, they were earning 13%, 23%, and 35% respectively on their equity investment. The reasons for this unusual discrepancy are portrayed in EXHIBIT III. The following points are especially noteworthy:

In France, and particularly in Germany, rapid depreciation provisions provide growth industries with sizable tax-free funds for reinvestment.

In Germany, product shortages enable manufacturers to operate with almost no finished-goods inventories, thus cutting down the working-capital charges.

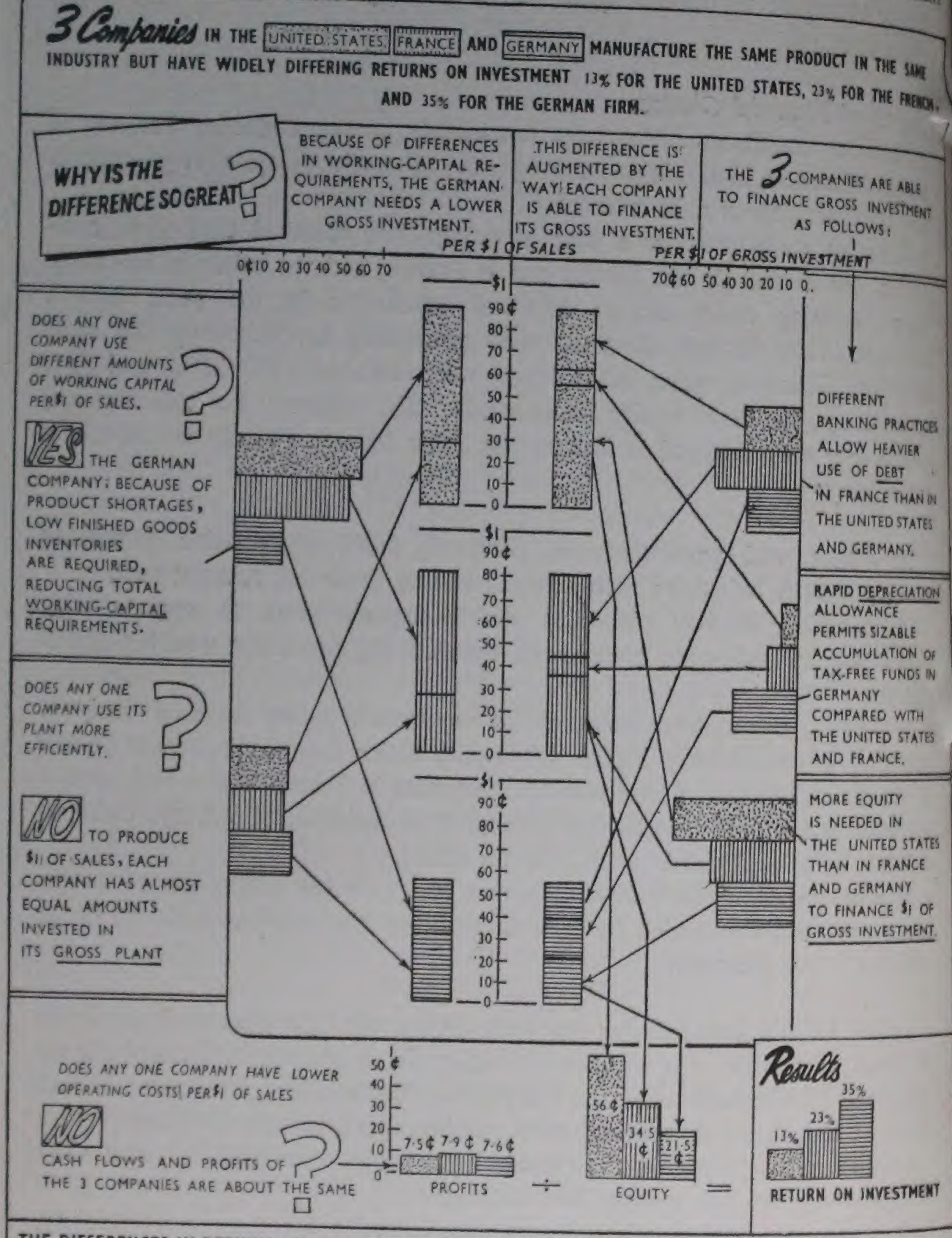
In France, banks lend as much on reputation as on financial analysis, resulting in considerably higher debt-equity ratios than banks would permit in the United States. Consequently, companies in France with a high capital turnover and a good "reputation" benefit from a degree of leverage which is unusual by our standards in the United States.

The utilization of debt leverage hinges partly on the availability of investment opportunities, which in turn depends on the relative maturity of an industry. For example:

In the United States during the early 1950's, the cash generated per dollar of gross investment was significantly higher for producers of finished chemicals than for the basic chemical companies. Nevertheless, companies in both ends of the chemical business were earning approximately the same return on their equity, because basic chemical companies were able to offset their disadvantage through greater debt leverage.

Recently, the basic producers have experienced a decrease in profitability. However, this is caused less by a decrease in the cash generated per dollar of gross investment than by the fact that the industry's financial resources available for investment have increased faster than have the available investment opportunities, which in turn has reduced the need for debt and thus cut down the use of leverage. EXHIBIT IV illustrates this experience for two representative U.S. companies.

EXHIBIT III. HOW VARIATIONS IN FINANCIAL CONDITIONS INFLUENCE RETURN ON INVESTMENT



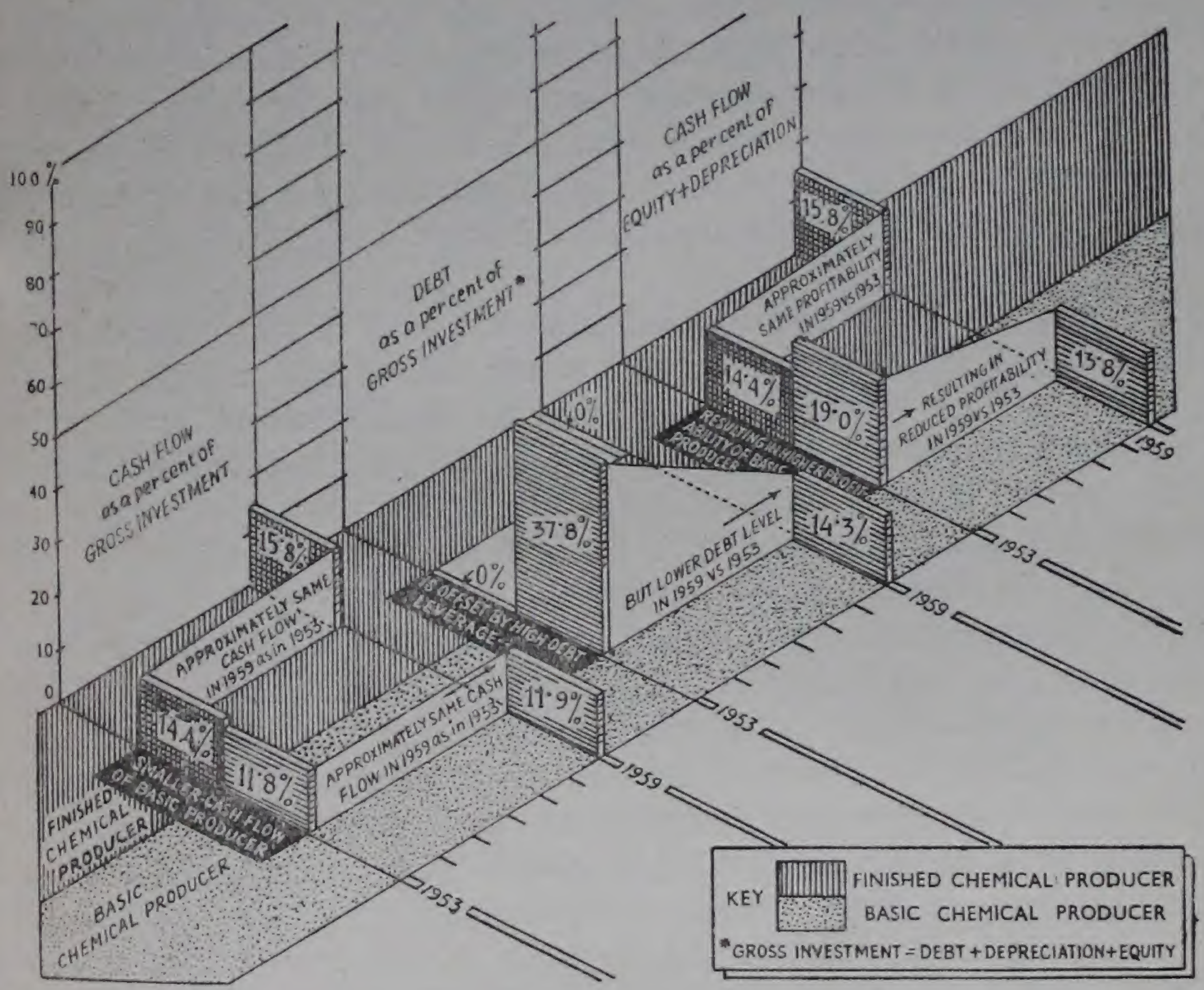
Burden of Overcapacity

Differences in requirements as to when and how much capacity has to be constructed are vital. To illustrate, compare the household appliance industry with the chemical industry :

In the household appliance industry, the ratio of sales to gross plant investment is very high, while profit margins are rather low. The latter element makes low costs imperative, while the high capital turnover requires tight control of capital. The vital implication is that one has to be very careful about building too much in excess of current demand; large plants are vital to mass-production economics, but if constructed too far ahead of the time that demand materializes, the resulting drain on profits can be disastrous.

In spite of these basic truths, several household appliance companies in Europe have succumbed to the temptation of building—far in excess of their market share—huge modern plants which they felt were vital in their type of mass-production industry. U.S. companies in particular—influenced, perhaps, by the fact that overcapacity is common at home—seem to have lost sight of the heavy burden which surplus capacity imposes if competi-

EXHIBIT IV. IMPACT OF DEBT LEVERAGE ON PROFITABILITY



tors are operating at near capacity and setting their prices on that basis. Their large, not fully utilized, plants in Europe have constituted a severe drain on profits and have become especially burdensome when financed by bank debt, as the experience described in EXHIBIT V demonstrates.

The profitability conditions of the chemical industry are very different.

The emphasis is on process economies and chemical routes with ancillary problems of location, raw materials supply, plant scale, and outlets to the market for several coproducts. New processes, based perhaps on new material and having different scale economies, may change the competitive position of a particular project markedly, as may new developments in the market. The industry thus experiences a high degree of flux and change.

With most chemicals requiring a large investment in plant for each sales dollar, high profit margins are necessary to justify the investment. Usually, price levels decline with time, while costs mostly depend on scale of operations. Hence, there is a considerable premium on "getting in early" on a new development when profits are large. Early starters, if they succeed in maintaining their initial market position in subsequent periods of maturity for the field, will also be enjoying the cost advantages of large plant scale supported by market leadership. Thus, "thinking early" and "thinking big" are both necessary ingredients in a successful chemical venture.

Specialization & Concentration

Another critical factor to watch is the need for specialization and concentration rather than diversification. Not always are the former important, but in industries where they are crucial, a great deal may hinge on top management's sensitivity to them. As illustrations we can again look at the chemical and household appliance industry :

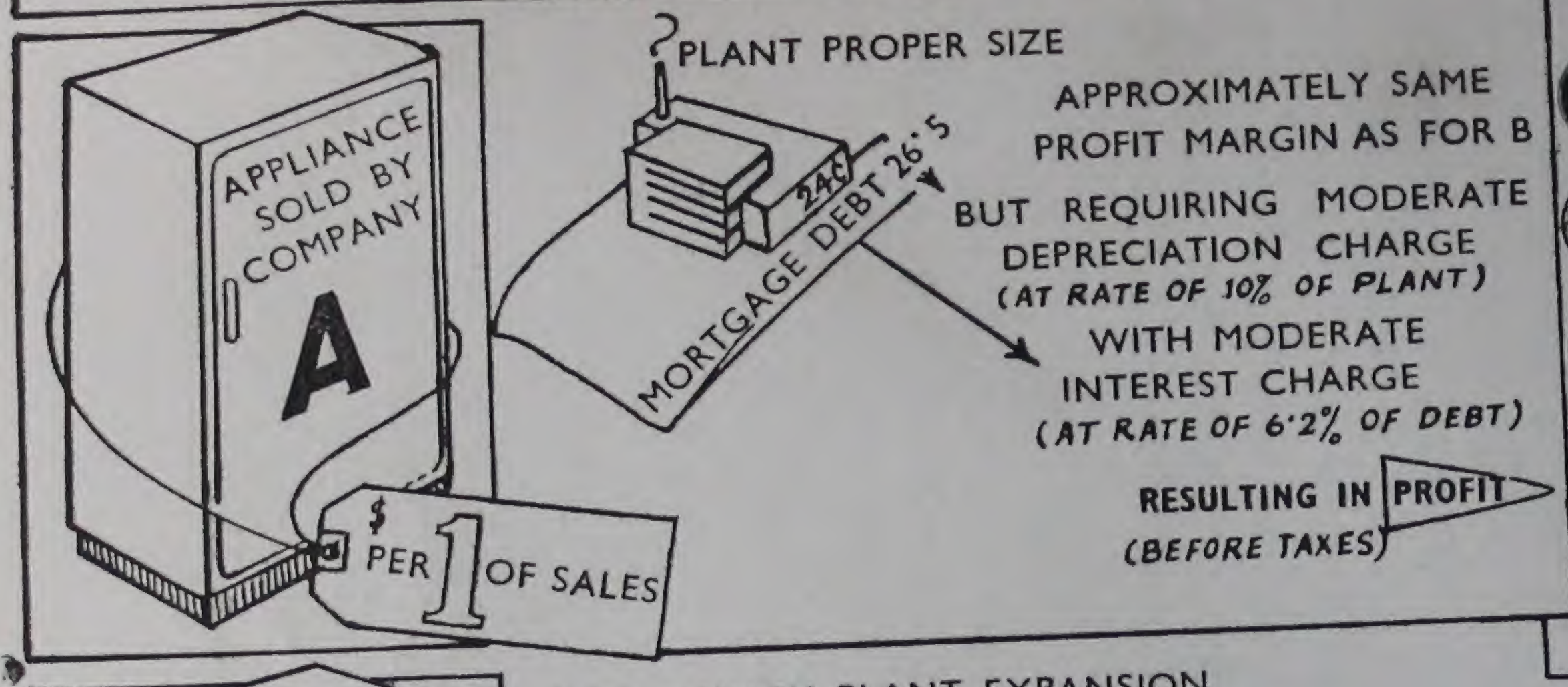
Thinking big in the chemical industry requires a certain concentration of investment funds. Concentration, however, necessitates a high degree of confidence. Lack of sufficient confidence may lead to several small projects to hedge against the failure of any one project. This is undesirable because, while hedging in small ventures to spread risks may ensure survival, it does so only at a subsistence level; it is the bold large-scale operation that makes the money in this industry.

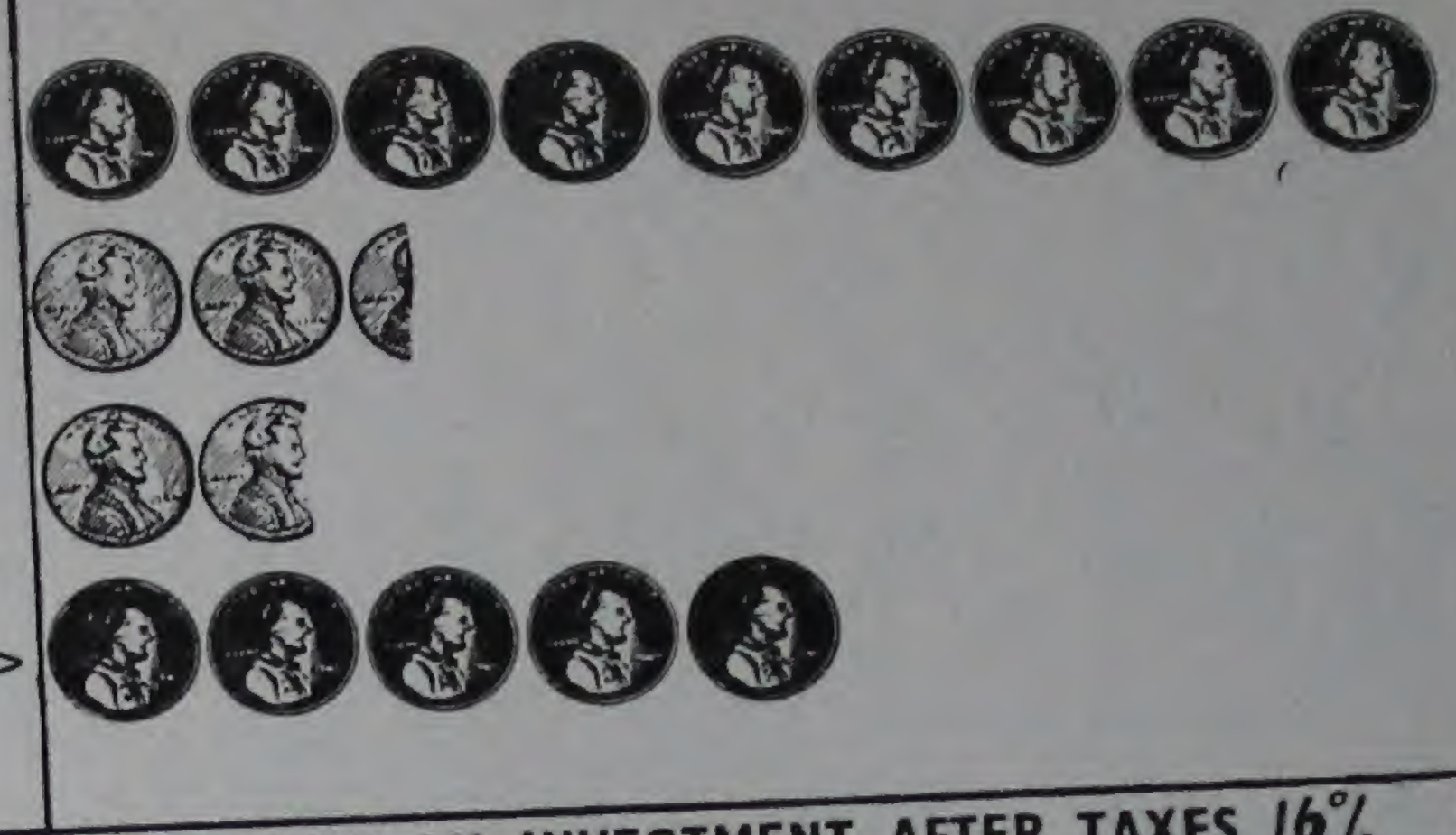
At the same time, specialization and concentration are complicated by what might be called *structural* requirements. Entry usually is not possible without the satisfaction of a wide range of such conditions as having a low-cost and secure source of raw materials and marketing or disposition arrangements for the several coproducts which are simultaneously manufactured in a variety of chemical processes. Also, a successful marketing program may require several complementary products, thus further extending the scope of a chemical operation abroad. It is inability to satisfy these structural requirements completely which inhibits foreign entry by chemical companies in a major way. Thus, even large American chemical firms have experienced major difficulties in entering the European market.

Specialization in the household appliance business is crucial for different reasons. Because of its narrow margin, price and cost control must be very tight, with the result that top management must place a great deal

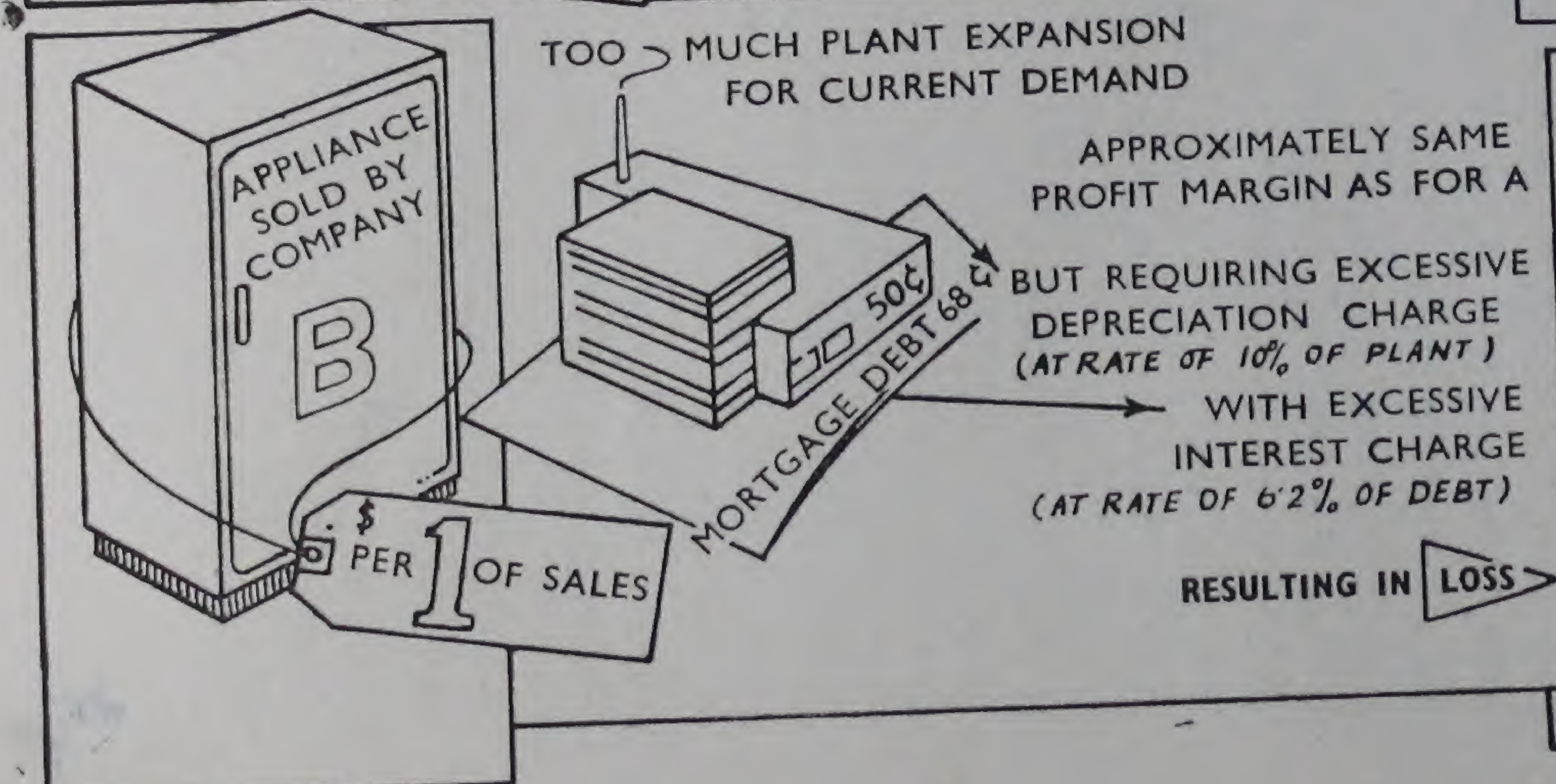
EXHIBIT V. IMPACT OF EXCESS CAPACITY AND DEBT CHARGES ON PROFITS

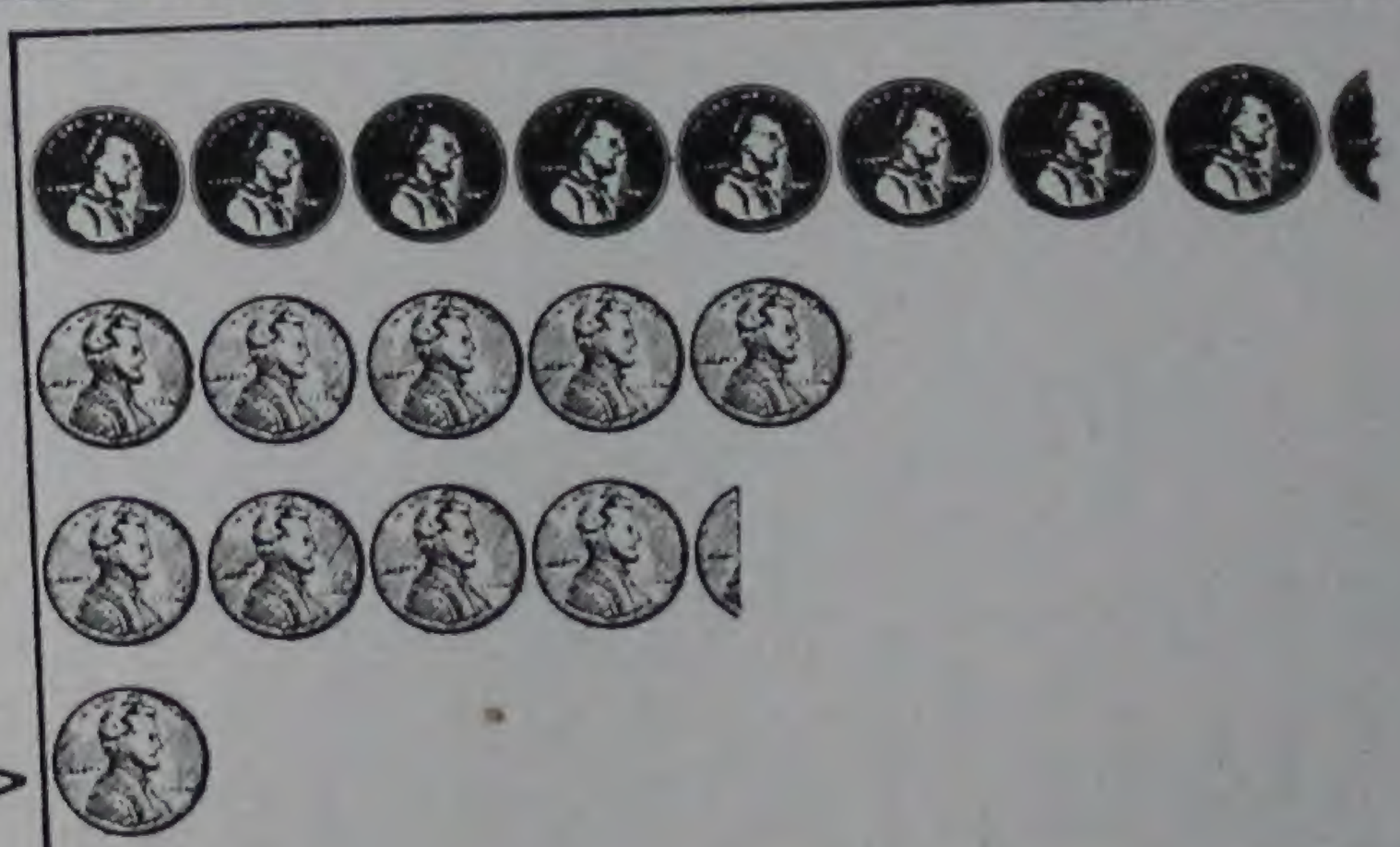
EVEN THOUGH TWO APPLIANCE COMPANIES MAKE THE SAME SALES AND PROFIT MARGINS ------ THEY DIFFER IN TERMS OF CAPACITY PLANNING AND RESULTING DEBT ----- WITH SEVERE IMPACT ON THEIR PROFITABILITY





RETURN ON INVESTMENT AFTER TAXES 16%





RETURN ON INVESTMENT AFTER TAXES 0%

of reliance on the ability of the manager in immediate charge of operations. However, price concessions will always be required to move inventories that inevitably pile up because even the best forecasting cannot fully anticipate all variations in consumer demand. Hence, considerable attention must be given to systems which keep inventories low as well as to the skill of merchandising. The latter, in fact, can be defined in the appliance industry as the ability to move inventories with the minimum concession in price.

Therefore, the type of management necessary is one that combines promotional skill with a fine sense of control. Close familiarity with the appliance business has shown that management will work best when both these qualities can be found in one man. And because so much sensitivity is required in the merchandising job, it is best performed when only one major product is handled. Consequently, there are convincing arguments for specialization in the appliance business.

Product Policy

Different income levels in foreign countries often demand different product lines from those offered in the United States.[1] Nevertheless, the major European operations of some U.S. firms are exclusively devoted to manufacturing the U.S. product. Because of size, versatility, quality, or price, American-type products usually occupy a place only at the top of the effective European product line. With most of Europe's current market growth occurring not in these products but in the *basic* models, the result is that the firms mentioned are losing their market shares. This leads to undercapacity operations of plants that are already relatively small, thereby increasing costs. Indeed, the U.S.-type products can usually be supplied more economically from American plants than from European sources.

Distribution Requirements

As was mentioned earlier, distribution can be one of the critical obstacles to successful entry into international business. It is therefore vital to analyze the particular distribution requirements for an industry as well as the prevailing conditions in the foreign country. Differences among countries can be most significant, requiring great flexibility and varying policies on the part of international businesses. *Even in the same industry* the distribution setup can favor the entrant in one country, while constituting a major hurdle for him in another country. To illustrate:

In the German consumer-goods industries, wholesalers are by tradition non exclusive, making it difficult for leading manufacturers to control distribution. The alternative, direct selling, may increase costs more than

[1] See Raphael Hodgson and Michael Michaelis, "Planning for Profits in World Business", HBR November-December 1960, p. 135.

prices can support. Hence, an opportunity exists for the smaller manufacturer to an extent precluded in countries where there are distribution bottlenecks. However, the situation puts greater emphasis on other marketing elements, such as price and reputation. For instance, it may increase the importance of advertising. This provides an opportunity for the importer who can advertise, who can be expected to meet prices, but who usually has difficulty in controlling distribution in a foreign country.

In France, the actual shortage of distribution (a large city such as Lyons has only two really capable appliance wholesalers) puts an extraordinary burden on newcomers in the industry. They normally must sell direct, and in France—with its widely dispersed population—this is a very expensive proposition. Also, distributors who are available insist on a full line of white goods (i.e., refrigerators and washing machines), a condition which can tempt manufacturers into a full-line operation that (as we have indicated) is difficult to manage.

In Britain, distribution is similar to what it is in the United States with a relatively large number of exclusive wholesalers. Some manufacturers have begun to sell direct, a condition which has left their former wholesalers available to importers who wish to use them.

INTERNATIONAL COMPARISONS

By comparing the operating margins of companies in different countries, management can easily recognize the opportunities for entry. The question that executives may face now is: Can the policies and practices which permit a profitable operation at home under a lower operating margin also prove successful abroad? As our earlier discussion of industry conditions has shown, there are inherent dangers in transferring the reasoning that works in an industry from one country to another. Operating margin analysis checks false analogies by providing a useful framework for evaluating them. For example:

Most electrical components in Europe are sold at a price several times the cost of materials, compared with an operating margin of only 80% in the United States. This points to sizable opportunities. But before any action can be taken, it is necessary to ask why operating margins are so much larger in Europe, and whether it is appropriate to analogize American involuntary and discretionary costs in determining how a U.S. entrant should behave in this industry in Europe.

Involuntary costs appear excessively high in Europe because of lack of standardization and because a large number of companies have relatively small scales of manufacture. On the basis of American experience, it would appear desirable to standardize the product line around a few basic types, impose it on the industry at a low price, manufacture in great quantities,

and "shake the business down". One manufacturer is doing precisely this. At present, this firm cannot meet demand; delivery times are up to 15 months! It has become an outstandingly profitable operation and has not yet been seriously challenged.

In the case of *discretionary* expenses, however, an analogy with U.S. experience does not appear relevant. For instance, discretionary expenses in one U.S. electronic systems industry have become truly defensive; it has become a competitive necessity here to spend between 15% and 20% of sales in providing custom-tailored systems engineering to industrial customers. Without this provision, a company's market share would suffer seriously. In Europe, on the other hand, not nearly as much systems work is required. Also, current growth requirements lead to long deliveries, resulting in minimal sales expenses or direct sales of components to large users.

Thus, while U.S. experience in the involuntary cost area appears to be a promising guide, the opposite is true in the case of discretionary expenses.

Threats and Opportunities

International comparisons of operating margins are helpful in still another way. Foreign import threats or export opportunities can be spotted by comparing the domestic operating margin in a given country with importers' operating margins. The operating margin of an importer indicates the degree by which the selling price in the importing country less import duties and freight exceeds the materials cost in the exporting country. It thus expresses for the firm selling abroad the margin within which both the domestic manufacturing and the foreign sales effort must be conducted.

By calculating the operating margin for various exporting nations and using the domestic operating margins, management can construct a grid of opportunity which compares the foreign opportunity with that at home. An example is shown in EXHIBIT VI. Such a grid also shows the discretionary cash available for any volume of goods to be moved abroad.

Knowing its position relative to that of foreign competitors, a firm can decide whether and how to enter international markets. This analysis will take into account both the industry conditions and the nature of competition in the foreign country (which implies analyzing the discretionary expenses of the established firms). To illustrate the total approach:

The opportunity grid in EXHIBIT VI shows that in 1959-1960 a German refrigerator manufacturer could expect a 61% and 68% operating margin in France and Britain respectively, compared with 40% in his own market. However, analysis of industry conditions as well as discretionary expenses in France and Britain during that period showed significant differences. In view of France's acute shortage of distribution, it was necessary to spend a significant portion of one's discretionary money on distribution, especially on direct selling. This aspect, combined with lower plant scales, required

higher margins in France than in Germany, while still making for very low profits. In Britain, on the other hand, distribution was less tight and, in spite of high involuntary costs, the industry was enjoying high profits.

As a result, even though German producers could count on almost equal operating margins in both France and Britain, entry into the British market was more profitable and could be more easily achieved. In Britain, price reductions alone proved-highly effective; while in France, the situation would also have required a distribution investment (e.g., a full product line or company-sponsored outlets).

Check Points

In evaluating foreign opportunities, three elements are often of crucial importance: *product line, pricing,* and *distribution*:

(1) In the preceding example, German refrigerator manufacturers had little difficulty of a *product-line* nature because their product was very similar to British refrigerators. Also, commodities such as chemicals, aluminium, steel, paper, or glass are fairly identical among countries, thus not only saving trouble for the producer but also enabling buyers to switch more easily to foreign sources of supply. However, in many instances product lines will differ in composition from country to country, sometimes requiring expensive adjustments. The cost of these adjustments should be taken into account in drawing up the opportunity grid.

(2) Opportunity grids for commodities normally show wide operating margins because a significant portion of a firm's discretionary money is required to meet fixed plant costs. In commodities, as a result, the foreign entrant enjoys wide discretion, giving him greater *pricing* flexibility than that enjoyed by an exporter of differentiated products with their lower operating margins. In short, price cutting is most likely to be effective where there is a wide operating margin, a minimum of product differentiation, and a marked tendency on the part of customers to shop around for low-price suppliers.

(3) The *distribution* bottleneck is normally less critical for commodities than it is for differentiated products. Although a domestic commodity manufacturer may have established a firm hold on local distribution, it does not take much foreign competition, even through irregular channels, to put severe strains on the local pricing structure. On the other hand, the earlier examples from the household appliance industry show how distribution may constitute a serious hurdle to the exporter of differentiated products.

In view of these three elements, the level of tariffs that will inhibit trade must be considerably higher for commodities than for differentiated products such as appliances; the former are more sensitive to changes at the top of the "wall" than the latter are. Therefore, the impact of economic integration in Europe with its gradual abolition of tariff levels will most

probably be felt more quickly and more strongly by commodity producers. This may force them to become continental in scope more rapidly than manufacturers of appliances and other differentiated products.

EXHIBIT VI. RELATIVE OPERATING MARGINS OF INTRA-EUROPEAN SALES OF 150-LITRE REFRIGERATORS, 1959-1960.

(Margins existing in each country are shown in black)

EXPORTING COUNTRY \ IMPORTING COUNTRY	FRANCE	GERMANY	ITALY	BRITAIN
FRANCE	50	8	(6)	56
GERMANY	61	40	6	68
ITALY	81	37	45	81
BRITAIN	47	10	(21)	72

NOTE: The operating margin is calculated as follows: (1) from the sales price in the country of destination subtract (*a*) the tariffs, taxes, and freight costs to ship the goods there, and (*b*) the materials cost in the country of origin; (2) divide the figure thus obtained by the materials cost in the country of origin. (Figures in parentheses indicate negative margins.)

CONCLUSION

Opportunity analysis imposes a strong discipline on business planning by ensuring that both the immediate and the ultimate goals of management are consistent with the industry's current and future competitive conditions. Such goals, in turn, can be translated into clear entry and participation requirements for a foreign venture. These requirements have to be consistent with the firm's capabilities and willingness to commit the necessary resources. It is the reconciliation of these interrelated objectives which makes the application of operating margins so useful. For example:

Suppose that a venture has a 50% operating margin and that management's target is a volume of X dollars. Estimating the involuntary costs at this volume plus the discretionary expenses required to achieve it, executives can determine whether the needed outlays can be covered by the 50% margin while leaving an adequate profit. If not, either the venture should be abandoned or the sales objectives must be raised. Perhaps a larger marketing investment would produce sales levels of a magnitude large

enough to lower involuntary costs to the point where an adequate profit could be made within the 50% operating margin.

Opportunity analysis enables management to cut through the confusion of current fluctuations and erratic circumstances to the conditions of ultimate success. It will not exaggerate these conditions nor lead to the extraordinary pessimism that, say, a run on prices may otherwise induce. Also, it helps executives to foresee any important differences between the venture under their consideration and the industry leaders'. The very discipline of this exercise may reveal errors in the initial project—for example, by demonstrating that instead of spreading resources over several projects it might be better to concentrate on one, or that the contemplated program is too large for the resources a company is able or willing to commit. Thus, opportunity analysis leads to consistency in planning in terms of:

The immediate goals of a venture.
The ultimate goals of a venture.
The parent company's capabilities.

Let us consider each of these elements in turn.

Immediate Goals

In terms of the discretionary margin, a project should be designed to avoid starting at too great a disadvantage with direct competitors. Thus, the test of viability of a new venture will be whether it starts in a sufficiently advanced form to assure progress as well as profits, considering the leaders' position, their probable rate of growth, and the corresponding decline of their involuntary costs. Consequently, if competition in the field chosen is already established at a certain scale and cost level, supported by certain distribution outlets and promotional resources, it is absurd to try to enter the business with a higher cost and a smaller distribution investment.

These statements may seem evident enough, but some highly sophisticated American companies have recently undertaken ventures in Europe that are laboring precisely under this type of disadvantage—all the results of an inadequate initial plan. If it is the scale of a chemical plant or the type of process that is at fault, the error cannot be rectified without a major new investment. If a consumer products business ignores a virtual distribution monopoly of its competitors, it cannot rectify the situation without a major investment in direct distribution. Recognition of these additional investment requirements at the outset might have changed management's thinking about the initial venture.

Selection of immediate goals should be based on recognition of the rate of growth of the market, and the objective should be at least to maintain the firm's relative position with the leader's. The route to this objective may

lie either in direct competition with industry leaders or in avoiding the field of direct competition altogether. There is no better way to recognize the costs of various strategies than to catalogue the marketing mix of every competitor and to determine, by analysis of discretionary expenses, what each method costs and what sales volume is supporting it. With these data should be included the "defensive" costs of many types of business—e.g., the very high systems expense that is characteristic of the American process control industry, or the high level of research expenditure imposed on the pharmaceutical industry by rapid product obsolescence and product insecurity.

An analysis of this type can be invaluable in helping management to recognize:

1. The margins that must be provided for various channels of distribution, which in turn helps with the selection of those channels that would be within a venture's resources and objectives.
2. The cost of developing direct distribution, if satisfactory distribution is no longer available, or of challenging manufacturers in existing channels.
3. The size of the service organization and the level of promotional effort (e.g., advertising expense and point-of-sale effort) required to sustain a business.
4. Whether complementary product lines are necessary to sustain the distribution system and, if so, what the cost of purchasing or manufacturing such lines is.
5. The needs for new capacity and product-development programs to maintain a profitable position.
6. The discretionary savings that might be achieved if different competitive methods are chosen, thus making a contribution to profit or providing a price wedge.

All this means that management can define the entry and participation requirements which will prove effective under given conditions. For example:

If the competitive route requires control of distribution, the system created for that purpose must be maintained through tight inventory policies and satisfactory discounts. Or complementary product lines may have to be carried. It may also be necessary to maintain an adequate market share even though this may involve a declining price policy.

If the competitive route is through price competition, such tactics as frequent model changes or large promotional campaigns may have to be dropped. More attention will have to be paid to the lowest cost distribution through such outlets as mail order or discount houses. It will also be imperative to have an efficient manufacturing plant.

If product features are a vital selling argument, it will be necessary to back them up with outlays of the discretionary type, e.g., advertising and demonstration.

If manufacturing opportunities in a standardized line of products are going to be exploited in an unstandardized market, initial promotion and distribution channels should be consistent with manufacturing plans.

If a small venture is contemplated, management should not select a market or a product that is big but a segment that is within its concentrated capabilities and that can be served independently. A segment of this size may be a source of dissipation or an unimportant sideline for the bigger firms.

If only a small venture with a relatively poor discretionary margin is possible, then management should abandon the project unless it can offset the disadvantage with some special advantage such as U.S. technology, depreciated tooling, or a more complete product line supplied partially by U.S. imports.

Ultimate Conditions

In almost every product field comes a time of maturity. This period is not necessarily an unprofitable one. Market leaders are usually able to stay profitable, as evidenced by the experience of many American businesses. Nevertheless, these periods can be characterized as highly competitive, with operating margins very low because of high volumes of production by the leaders, which enables them to enforce severe price pressures to reduce participation in the industry. The leaders of the German refrigerator and the British television industries have pursued such a program to the extent that only two profitable and dominant manufacturers remain in each field.

The foregoing analysis of operating margins and involuntary and discretionary costs provides some yardsticks of the ultimate conditions within which a venture may be required to operate. For example:

In the case of the refrigerator industry in Europe, discussed earlier, we doubt whether in the long run operating margins can get much below 35% despite the volume levels or degree of competition that may ensue. This is the margin which would provide a satisfactory investment return to a manufacturer who has achieved his distribution objectives and who is manufacturing at a scale of about 300,000 units a year. A participant who achieves this level of production and marketing and who does not dissipate his management talent should have a permanently profitable condition. Unless management is prepared to operate under ground rules such as these, it would be unwise to enter this business.

The implications of such an analysis depend completely on management objectives. For example, a company might decide not to stay in a business

for a long period but enter only for early profits and sell out before competition gets tough. Some chemical ventures are launched on this basis. With innovation providing an early lead, prices are set to maximize profits regardless of the competition that is invited. A rapid payback makes the operation worthwhile, regardless of the ultimate consequences.

Extent of Commitment

A foreign venture's goals and the resulting entry and participation requirements must also be consistent with the parent company's capabilities, resources, and willingness. It is perhaps the *unwillingness* to commit physical resources and management rather than the *incapability* to do so that creates the real deficiency of so many foreign ventures. Easy profits in an immature, loose industry entice companies to risk the luxury of limited operations. At times, in fact, the limited foreign operations of American firms appear to be the consequence of attempts by operational managers to gamble with time in order to have at least some foreign program; if they were to place heavy demands on corporate purse strings, they might kill the contemplated foreign program altogether. Perhaps the weakness of several American foreign operations may be traced to this problem more than to any other.

If foreign operations are limited at first in order to conserve corporate funds, is the company willing to pitch in with more capital later on during the "shakedown"? It requires an unusually determined and confident management to increase investments in a losing business in order to secure a competitive position. Therefore, if a firm is incapable or unwilling to commit sufficient resources, it may be preferable to forget about a limited operation in a large field. On the other hand, it *may* still be profitable to select a *narrow* field in which a full-scale operation can be conducted. Companies with limited resources might, therefore, do well to reverse the usual process of analysis. Instead of choosing the field first and the cost of entry afterward, they might first determine the cost of entry they are willing to pay and then select projects accordingly. Rather than match the firm to the field, in other words, it would be better to match the field to the firm.

In this endeavour opportunity analysis once again becomes a valuable tool for decision makers by pointing up the possibilities of using resources in the most economical way. Four of these possibilities stand out and, because of their pertinence to management's final decision, make a fitting close to our discussion:

1. *Better timing*—Even though the risks of a venture may be greater, an early start makes it much easier to achieve a viable position by building up quickly to a competitive scale of manufacture or to an adequate market share. Furthermore, poor starts can be rescued more easily.

This possibility of reducing costs is important in Europe today because there are many areas of considerable immaturity there comprising industries that, in the United States, rank high in maturity. For instance, a large part of the electrical manufacturing industry in Europe still enjoys a great deal of looseness, lack of production standardization, and continuing market growth.

2. *Acquisition*—This is often a very inexpensive method of entry into mature businesses, especially when an unprofitable firm is acquired which fills top management's structural objectives either as a source of supply or as a means of distribution. (The latter is particularly important during the maturity of a field, when a slackening rate of growth makes entry difficult for outsiders.)

3. *Specialization*—This approach enables a company to make limited resources go further and achieve a strong relative position in the field in which it concentrates, without compromising its product line or distribution requirements.

4. *Exploitation of special skills*—This kind of effort may significantly reduce the demands on a foreign venture, especially in relation to its competitors. For instance, research and technical know-how developed in the United States may give the venture an obvious edge in competing for sales. Similar results may be achieved by supplying parts of the product line or certain components from the United States, by using idle or obsolete machinery and tooling from American plants, by utilizing the parent corporation's design and engineering staffs, and so forth. Such backing by the parent company may also enable a significant reduction of a foreign venture's discretionary expenses.

12/*The Adoption Process : Foundation for Research on Human Behavior*

Understanding the adoption process of new products is essential if the firm is to capitalize on the notion of market segmentation. This paper discusses the nature of the adoption process, the kinds of change involved, and the different adopter categories which have been identified as a result of the research which has been conducted on this subject.

For many products, the process of adoption follows a rather uniform pattern, from the time the new product is developed until it is widely accepted by the ultimate consumers. More is known about the adoption of agricultural products and practices than about others. Rural sociologists have been concerned with the introduction of new practices and with new product adoption in agriculture for a number of years, and they have systematically studied the process by which change takes place. In addition, some studies have been made of other kinds of innovation, including the adoption by doctors of new wonder drugs for treatment,[1] the adoption of new educational practices by school systems,[2] and the adoption of color television.[3] The process of adoption in all these cases has been quite similar. There are exceptions to the pattern; for example, black and white television. The general pattern appears so widely, however, that it is the central theme of this report.

Researchers have charted the course of a new product by determining *when* people adopt it. The curve which results is a simple one, the well known probability curve, in cumulative form.[4] A few people adopt a product at first, then a few more, followed by a rather sharp increase and finally a leveling off when most of the potential consumers have adopted the product.

[1] Katz, E. The two-step flow of communications: an up-to-date report on an hypothesis. *Public Opinion Quarterly*, 1957, 21, pp. 61-78. Menzel, H., & Katz, E. Social relations and innovation in the medical profession: the epidemiology of a new drug. *Public Opinion Quarterly*, 1955-56, 19, pp. 337-352.

[2] Mort, P. R., & Pierce, T. M. *A time scale for measuring the adaptability of school systems.* New York: Metropolitan School Study Council, 1947.

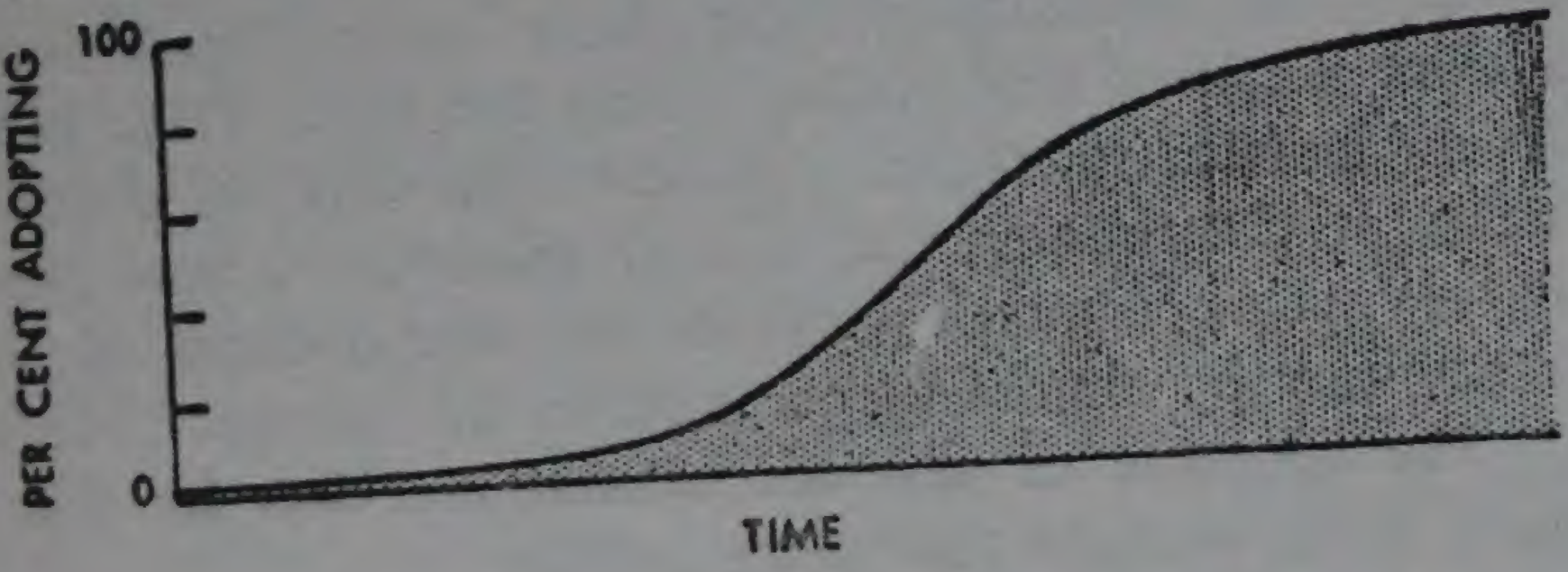
[3] Batten, Barton, Durstine & Osborn. *Colortown.*

[4] North Central Rural Sociology Committee, Subcommittee for the Study of the Diffusion of Farm Practices. *The diffusion process.* Ames: Agriculture Extension Service, Iowa State College, Special Report No. 18, 1957.

SOURCE: From *The Adoption of New Products: Process and Influence* (Ann Arbor, Michigan: Foundation for Research on Human Behavior, 1959), pp. 1-8.

Such a curve is presented in general form in Figure 1. No scale is given for the time dimension, because this differs from product to product. A number of studies indicate, however, the *form* of the curve remains constant, and therefore that knowledge of the time required for a first

Figure 1



relatively small group to adopt a new product will, by establishing the time scale for that product, make possible fairly accurate prediction of the rate of adoption by the rest of the applicable universe.

The Kind of Change

The time it takes from introduction to wide-spread acceptance depends, in part at least, on the kind of change involved. The adoption of a new product can be viewed as a special case of attitude change. Almost by definition, such a change encounters resistance. The new product or method usually alters or replaces something which is already part of the individual's pattern of thought. If the change under consideration is a really major one, it is quite likely that the attitudes and feelings associated with the old way are strongly held and will account for a great deal of resistance. On the other hand, if the change is trivial, the associated attitudes may be taken on easily. (They may also be cast off easily, of course.) Most new products or practices probably encounter resistance somewhere between these two extremes.

When new products are being adopted, there are different levels of *complexity* of change. The greater the complexity, the more resistance is aroused, and the longer the period required for adoption. Researchers have listed four levels of complexity in the changes usually confronting farmers who are adopting new products or practices.[5] Least complex is a simple change in materials or equipment. Such a change might be the decision to try another brand of fertilizer or to increase the amount already being used. A change in technique is slightly more complex. The farmer must learn to use the new method and this may involve more risk. An example might be applying fertilizer along planted rows, instead of broad-

[5] Same reference as footnote 4. Also, Wilkening, E. A. The role of communicating agents in technological change in agriculture. *Social Forces*, 1956, 34, pp. 361-367.

cast over the field. The third level involves both a change in mate and a change in technique. A farmer who has never used fertilizer fac such a change. He must adopt the new material, acquire the equipmen apply it, and learn how to use the equipment. The most complex chan is a change of enterprise; for example, a change from cotton growing dairying.

Obviously there are shadings in complexity among these four types change, and other kinds of new products may involve a wider range of com plexities than do farming practices. However, the level of complexity is a important factor in determining the time it takes for a new product to be adopted. Fifteen years elapsed between the introduction of hybrid seed corn and its adoption by almost 98 per cent of the farmers.[6] Other changes take longer. The adoption of new educational practices by school systems took 50 years.[7] Some changes take place quickly.

It is not always easy to tell how complex a change is involved in a new product. Hybrid corn is one example. Initially, this seemed like a simple change in materials. Actually, it was a far more complex change. Farmers feared the total reliance on commercial sources for seed corn, something they had previously produced for themselves. Furthermore, many farmers took pride in their ability to select good seed corn from their own crop, and they were accorded status for this skill. The new hybrid corn not only made the farmer feel more dependent, it also did away with an important source of prestige. A large majority of farmers had probably adopted hybrid corn within five years of the initial distribution, but it took fifteen years before almost all farmers were using it. Now, when a new hybrid variety of anything is introduced, it is adopted much more quickly. Examples are hybrid chickens and hybrid hogs.

The complexity of the change is only one important factor in determining the time required for adoption. There are others. For instance, *cost* is important. The more costly the item, the longer it takes before it is widely adopted. *Rate of return* and *Visibility of return* are also important. A change which has rapid and obvious results is adopted more quickly than a change with slower, less visible results. In the long run, of course the change which produces slower results may return more, but it still is not adopted as quickly. A new fertilizer is likely to be adopted more quickly, for example, than soil conservation practices.

THE INDIVIDUAL ADOPTION PROCESS

The decision to adopt a new product is not simply a "yes" or "no" decision.

[6] Ryan, B., & Gross, N. C. The diffusion of hybrid seed corn in two Iowa communities *Rural Sociology*, 1943, 8, pp. 15-24. Also, Ryan, B., & Gross, N. C. *Acceptance and diffusion of hybrid seed corn in two Iowa communities.* Ames : Iowa Agriculture Experiment Station, Research Bulletin 372, 1950.

[7] Same reference as footnote 2.

or is it something that happens all at once. When an individual is confronted with the possibility of change, he goes through several mental stages before he finally makes up his mind to adopt or not to adopt. Five stages in the decision-making process may be distinguished.[8] Farmers readily recognized these stages when questioned regarding their decisions to make changes and adopt new products.

Awareness comes first. At this point, the farmer learns about the new product. He knows it exists, but he has only general information about it. The *interest or information* stage follows. If interested, the farmer begins to collect more specific information about the new product. If his interest continues to grow, he wants to know the potentialities of the new product for him; whether or not it will increase his income or contribute to other ends considered by him to be important. The next step is the *mental application or evaluation* stage. The farmer goes through the change mentally and asks himself, "How would I do it? Can I do it? If I do it, will I be better off?" The final stage before adoption is the *trial* stage. At this point the farmer tries the product out on a small scale if this is possible. Many farmers purchased a small can of weed spray and used it on their gardens before they used it on their crops on a large scale. A great many farmers planted six acres of hybrid seed corn the first year, the acreage one bushel of the new seed would sow. Some products cannot be tried out on a small scale, and it seems quite reasonable to expect such products to require a longer adoption time. However, people seem to be quite ingenious at finding ways to try new ideas. Some housewives prepared small amounts of food for freezing, and either rented locker space or used a neighbor's freezer before they gave up traditional canning methods and bought the necessary equipment for themselves. Marketing people have been aware of the value of free trials for many years. The trial stage appears to play a crucial role in the decision-making process. However, the other stages are important too, and probably give meaning to this final step before adoption. They should not be ignored.

The last stage is the *adoption* stage. At this point the farmer decides to adopt the new product and begins using it on a full scale. Presumably he is a "satisfied customer", at least until some other product comes along to replace it and the adoption process starts again.

ADOPTER CATEGORIES

Obviously, not all people adopt a new product at the same time. The adoption curve illustrates this point and suggests that some people arrive at a decision more quickly than others. Some people adopt very quickly. Others wait a long time before they take up the new product, and still others never adopt. There has been a great deal of interest in these individual

[8] Same reference as footnote 4.

differences and great deal of speculation about "innovators", those who are first in a community to adopt a new product. To these individual differences, the Iowa State researchers took the data from a number of independent studies of new product adoption by farmers. They divided people into groups according to time of adoption,[9] and then studied each group. Significant differences appeared among them. These were the groups they distinguished and studied:

	People adopting		*Cumulative total adopting*
First	2.5%	innovators	2.5%
Next	13.5%	early adopters	16.0%
Next	34.0%	early majority	50.0%
Next	34.0%	late majority	84.0%
Last	16.0%	laggards	100.0%

"Innovators" are arbitrarily defined here as the first 2.5 per cent to adopt the new product. Based on the data compiled, these generalizations appear for farm innovators.[10]

They have larger than average farms, are well educated and usually come from well established families. They usually have a relatively high net worth and—probably more important—a large amount of risk capital. They can afford and do take calculated risks on new products. They are respected for being successful, but ordinarily do not enjoy the highest prestige in the community. Because innovators adopt new ideas so much sooner than the average farmer, they are sometimes ridiculed by their conservative neighbors. This neighborhood group pressure is largely ignored by the innovators, however. The innovators are watched by their neighbors, but they are not followed immediately in new practices.

The activities of innovators often transcend local community boundaries. Rural innovators frequently belong to formal organizations at the county, regional, state, or national level. In addition, they are likely to have many informal contacts outside the community; they may visit with others many

[9] Note: For convenience in making comparative studies, researchers used standard deviations of a normal distribution to establish the percentage breaks between categories. People who fall within one standard deviation above the mean are considered in the early majority; people who are between one and two standard deviations above the mean are early adopters. Similarly, people within one standard deviation below the mean are late majority, etc.

[10] Same reference as footnote 4. Also, North Central Rural Sociology Committee, Subcommittee on the Diffusion of New Ideas and Farm Practices. *How farm people accept new ideas.* Ames: Iowa Agriculture Extension Service, Iowa State College, Special Report No. 15, 1955. Also, Rogers, E. M. Categorizing the adopters of agriculture practices. *Rural Sociology*, 1943, 8, pp. 15-24.

miles away who are also trying a new technique or product, or who are technical experts.

The "early adopters" are defined as the next 13.5 per cent of the people who adopt the new product. According to the researchers, early adopter farmers have the following characteristics.

They are younger than the average farmer, but not necessarily younger than the innovators. They also have a higher than average education, and participate more in the formal activities of the community through such organizations as churches, the PTA, and farm organizations. They participate more than the average in agricultural cooperatives and in government agency programs in the community (such as Extension Service or Soil Conservation). In fact, there is some evidence that this group furnishes a disproportionate amount of the formal leadership (elected officers) in the community. The early adopters are also respected as good sources of new farm information by their neighbors.

The third category of adopters is the "early majority", the 34 per cent of people who bring the total adoption to 50 per cent. The number of adoptions increases rapidly after this group begins to adopt. (See chart.)

The early majority are slightly above average in age, education, and farming experience. They have medium high social and economic status. They are less active in formal groups than innovators or early adopters, but more active than those who adopt later. In many cases they are not formal leaders in the community organizations, but they are active members in these organizations. They also attend Extension meetings and farm demonstrations.

The people in this category are most likely to be informal rather than elected leaders. They have a following insofar as people respect their opinions, their "high morality and sound judgment". They are "just like their following, only more so". They must be sure an idea will work before they adopt it. If the informal leader fails two or three times, his following looks elsewhere for information and guidance. Because the informal leader has more limited resources than the early adopters and innovators, he cannot afford to make poor decisions: the social and economic costs are too high.

These people tend to associate mainly in their own community. When people in the community are asked to name neighbors and friends with whom they talk over ideas, these early majority are named disproportionally frequently. On their part, they value highly the opinions their neighbors and friends hold about them, for this is their main source of status and prestige. The early majority may look to the early adopters for their new farm information.

The "late majority" are the fourth category. These are the 34 per cent of farmers who have adopted the new product after the average farmer is already using it.

Those in this group have less education and are older than the average farmer. While they participate less actively in formal groups, they probably

form the bulk of the membership in these formal organizations. Individuall they belong to fewer organizations, are less active in organizational work, and take fewer leadership roles than the earlier adopters. They do not partici pate in as many activities outside the community as do people who adopt earlier.

The last category, the final 16 per cent of those who adopt a new idea are the "laggards". This group may include the "non-adopters" as well if the new product is not used by everyone.

They have the least education and are the oldest. They participate least in formal organizations, cooperatives, and government agency programs. They have the smallest farms and the least capital. Many are suspicious of county Extension agents and agricultural salesmen.

These are some of the important differences among the adopter categories. They may provide useful guidelines for further exploration. For example, each of these categories plays an important role for the others in the adoption process. Innovators are the pioneers, and early adopters wait to see the innovators' results before trying the new product themselves. The early adopters, in turn, often influence the early majority. In addition, each of these categories seems to rely on different sources of information and influence, other than the sources already described.

13/Market Potentials and Marketing Management

DONALD R. G. COWAN

Precise measurement of the market potential for a product is essential if a firm is to operate with any high degree of efficiency. This article, after discussing the importance of market potentials, goes on to describe the time and place aspects of market estimation. A distinction is made between the potential for the company and potentials for salesmen. The different methods of establishing potentials and quotas and their strong and weak points are also discussed.

Management is showing renewed interest in adequate measurement of market potentials. Since 1940, general attention to this important phase of sales administration has not been as keen as in the period from 1925 to 1940. There have, of course, been exceptions as to short periods, particular firms, and special phases of the broad problem of potentials. After World War II, for example, a number of companies were keenly interested in their industry's and their own prospective share of the total economy, but they gave scant or superficial attention to potentials for their salesmen's territories.

Market Potentials

Recently in marketing research, technicians have devoted their time to costly fact-gathering about buyers' motives, preferences, and buying habits for particular products and marketing channels. All too often, however, these research men overlook the gold mine of market information continually gathered and tabulated in the records of their company's sales and selling activities and the information gathered by outside agencies, especially the government bureaus such as the U. S. Department of Commerce's Bureau of the Census and Office of Business Economics. Many of these research technicians do not know the methods of mining the valuable information about market potentials from these internal and external sources, which can be done at very low cost in comparison with fact-gathering by sample surveys. The latter have cast a hypnotic spell over researchers and executives alike. To be sure, these surveys help many companies to improve products, selling appeals and marketing methods and, by so doing, to increase their shares of the potential market. But interest in these surveys should

SOURCE: From J. C. Halterman and T. W. Meloan (eds.), *Market Potentials and the Use of Census Data* (Chicago: American Marketing Association, 1957), pp. 1-9. Donald R. G. Cowan: Professor of Marketing, University of Michigan.

not divert sales administrators from their central task, which is to k the market potentials, where the market is located, and how and in w quantities the selling and advertising effort of various kinds must be app to accomplish company objectives profitably.

In considering this central task of sales management, one finds the term "market potentials" is used with different meanings and dimensions. Fi market potentials may refer in a general way to the market provided by whole economy as measured by total national income or total natio expenditure. Gross National Product is often used for this purpose. E mates of Gross National Product for various periods in the future relate the nation's future market potential.

Second, market potentials may be regarded as one of numerous sectors the economy such as consumer soft goods, consumer durable goods, capi equipment, or construction. These segments do not rise or decline either unison or at the same rate, and in a broad sense are competing with each othe

Third, market potentials may mean a single industry's participation or share of, a major segment of the economy, such as the food industry share of consumer's soft goods, or the refrigerator industry's share of con sumer durable goods. Here again, there is competition between industries The increased use of automobiles is said to have affected the character of the demand for clothing and housing. Among food producers, it is well known that the purveyors of starchy foods have lost ground. One is reminded of the American Meat Institute's advertising campaign, sustained over many years, for the purpose of inducing consumers to spend a larger share of their food expenditures for meat.

Fourth, market potentials may refer to the size of the market for a parti cular product's classification, such as high-priced, medium-priced, and low-priced cars.

Fifth, market potentials may pertain to the sales volume and possibilities of a particular company.

Sixth, it very frequently applies to the individual products of a company.

Seventh, market potentials may be one of the previous concepts narrowed down to individual areas, such as regions, states, counties, cities, or other geographic areas. The Cleveland Chamber of Commerce is referring to the total market potential of the wide area served by that city when it speaks of Cleveland as the best location in the nation. As a general measure, the Chamber might use the Gross National Product or expenditure within a 500-mile radius of Cleveland if it were available. To a considerable extent, it is a "pie in the sky" concept as applied to a region. More frequently, however, the dimension of location in market potentials has been applied by general sales managers to the districts supervised by their district managers and the numerous smaller areas covered by their salesmen. All too frequently the salesmen have reason to feel that the market potentials estimated for their respective territories are shares of the Gross National Product, pieces

of the "pie in the sky", rather than rational measures of the potential market or the products they are trying to sell in their territories.

Eighth, the concept of a market potential may apply to the amount of sales which might be made to particular customers. It is frequently used in selling industrial goods, such as steel and machinery and, in consumer goods, to large retail systems.

Ninth, any market potential applies, either expressed or implied, to a period of time. Without the dimension of time, market potential cannot be expressed quantitatively or have much meaning. When past potentials are analyzed to show the shares obtained by sectors, industries, companies, or products, they provide a basis for judging past performance and for setting objectives for the future. Usually the objectives to be attained in short periods of time, such as a year or portions of a year, are termed "quotas". There may be quotas for the company, product, or departments, and both total quotas and separate product quotas for sales districts and salesmen's territories. The determination of realistic quotas depends not only on market potentials but also on the means by which the quota is to be attained within a given period. Hence, the quota has a time dimension extending into the future.

These nine meanings of market potential have been outlined in order to clarify our thinking. All of them have their place in helping to determine more exactly the future objectives of the sales department for given periods in the future. These objectives are likely to be unrealistic, even nonsensical, if they are not also based on proper consideration of the effort which the management is willing to expand in attempting to attain the potential. Further, it should be kept in mind that all judgment about the future is based on past experience. The analysis of what has happened in the past is undertaken merely to make more certain that the interpretation of that experience is as correct as possible, thereby reducing the element of chance in dealing with the future.

The general steps by which a company and its sales department may set up market potentials and objectives may be divided into two major divisions: those required in determining total market potentials and objectives for individual products or closely related product groups, and those relating to sales territory and customer potentials and objectives. Furthermore, in both there should be a clear understanding as to the length of time to which the objectives will apply, as this affects the market influences to be considered.

For a product or major product-group, the establishment of total market potentials and objectives for a ten-year period will involve various measurements and considerations. The first determination is the relation of past sales to market growth as measured by population, segments of the population, and Gross National Product. Since the future birth rate is an uncertain element, several estimates of future population may be used in

projecting future sales expansions. Recently, there is hope that by inquiring from married couples at different ages what their intentions are in regard to having children, a better idea of population increase will be obtained. For the present, greater reliance may be placed on a known relationship of sales growth to adult population because the children living today will be added to the adult population over the next ten years, while deductions due to mortality may be made with a high degree of certainty.

On the assumption that certain levels of employment and hours of work will apply over a ten-year period, the relationship of past sales to total employment or total hours of work may be projected into future estimates. In similar fashion the Gross National Product and segments of the Gross National Product may be projected under certain assumptions such as the growth of the work force, the rate of employment, and the increase in productivity; and in turn these projections may be used to estimate future market potentials from past relationships.

Other long-term changes are taking place in the economy, such as the growth in the retired and aged groups, migration from some areas to others, and changes in climate. Changes in technology, as well as in the volume of finished goods, are affecting the potential for industrial goods sales. These changes will increase the potentials of some products and reduce those of others.

The available supply and probable price of raw materials may affect the ten-year market potentials of some products. Changing technology in the making of a specific product and its competing products may also deserve consideration in determining long-range potentials.

Next, the product's share of its market may be analyzed to show how and why it has fluctuated or changed in past years.

Finally, the resources of the company and the willingness of the management to use those resources for expanded manufacturing facilities, research to improve the product, improved production methods, advertising and selling effort have very important influences upon the product's market penetration. Some managements are content to "hold the line" or even allow the sales of some products to decline while they devote company resources to expanding the sales of others. In effect, they have decided that the long-range sales quotas for some may represent declines while for others they may represent increases both in absolute amounts and in shares of the industry market potential. Thus, many other considerations should be combined with the measurement and prediction of market potentials in determining objectives and sales quotas for the long-term future.

Having set up long-term potentials and objectives for particular products, the company and its sales department may set up shorter-term objectives for a year at a time, based on the planned yearly increase necessary to attain the long-range objective, and a modification of the planned yearly increase is necessary to allow for the effect of the year's business outlook

on sales, and changes in the company's expenditures to attain the year's objective based on the business outlook. In some companies, attainment of the yearly objective may be divided into quarterly or monthly allotments, and upward or downward modifications in planned expenditures may be made after reviewing the degree to which the quarterly or monthly objectives are accomplished.

The monthly or quarterly review of the company's short-term product objectives or quotas provides an opportunity for keeping them realistic by modifying them in the light of changing business conditions. This action is necessary because the ability to make accurate predictions of the business outlook a year or even six months ahead has not been, and may never be, perfected. In our economy, both consumers and business people are free to choose what and when they will buy, without apparent notice.

For some firms there are special opportunities for making seasonal predictions with a high degree of accuracy. The meat packers, for example, know fairly accurately farmers' intentions to breed livestock and poultry, the current numbers of livestock on farms and ranges, farmers' marketing intentions in the light of the available feed supplies and crops, the comparative prices of livestock and feeds, the inventories of meat in coolers. The packers can estimate closely the sales volume of meat because it must move into consumption at a price because of its perishable nature, and also because there are 170 million stomachs to be filled daily at some price. Current employment, income, and competition of other foods make the prediction of prices to be realized much less certain.

For other kinds of manufacturing, considerable progress is taking place in measuring intentions to spend on the part of consumers and business firms. The Survey Research Center at the University of Michigan, working on behalf of the Federal Reserve Board, has been able, through surveys of consumer attitudes and intentions, to indicate for the ensuing year the direction but not the degree of change to be expected in consumer spending for consumer durable goods. Since 1947, business firms' expectations of business conditions have been surveyed quarterly and analyzed with considerable predictive ability by Dun and Bradstreet. Other meritorious surveys relating to the vital question of intentions to spend for capital goods have been undertaken by McGraw-Hill, the Department of Commerce, and very recently the National Industrial Conference Board, for capital appropriations by large companies. Again, they seem to indicate the direction but not the degree of change to be expected. The effect of announcing the results of all these surveys upon the subsequent actions of consumers, and more especially business managements, has apparently not been examined. Moreover, none of these repeated surveys have been in existence for more than ten years, and their ability to predict has not been put to the test of a subsequent major decline in business such as took place in 1920-21, 1929-30, or in 1937-38. Company managements, therefore, are justified in

making monthly or quarterly modifications in their over-all quotas on the basis of their current experience and their interpretations of the business outlook for one, two or three months ahead.

Area Potentials

Often the company's national product quotas are divided among the district managers' and salesmen's territories. They may then be used as sales objectives; as the basis for allocating selling, advertising, and other efforts; and as benchmarks for measuring subsequent performance. On the degree to which this is done with insight and reliability depends the usefulness of the whole procedure. It is worthwhile, therefore, to evaluate the various practices.

The first method is to divide the national long-range potential and next year's quota among the sales territories in proportion to their past sales. This method is defective to the extent that past performance in the various territories has not been in perfect alignment with the varying potentials. As a standard by which to measure subsequent performance, a quota based on past performance penalizes the good salesmen and favors the weak salesmen. If the company uses a similar proportionate division of the long-range potential as its objective, the proportionate shares assigned to each territory will be so much higher than actual sales that they will not be very useful as salesmen's goals. If used for the assignment or reapportionment of selling and advertising effort, it would result in the high performance areas receiving the larger shares regardless of the performance's relationship to the true potential.

The second method is to ask the salesmen to estimate the potentials in their respective territories and set their own tentative quotas for the ensuing year. In some cases these quotas are reviewed and adjusted. Then the national potentials and quotas are distributed in direct proportion to these estimates. One advantage is that the salesmen largely determine their own goals and are then held responsible for attaining them yearly and in the long run.

In selling industrial goods, it is frequently advantageous to require salesmen to construct their potential by studying the possibilities of sales to individual customers. The defects of this method are obviously the salesmen's inability to be objective, to avoid reflecting his own degree of success or failure in the competitive race, and to have accurate and complete knowledge of the possibilities of his territory.

The third method, available only to firms in a few industries, is to base the potential on established records of total industry sales by territories. Examples are the R. L. Polk compilations of car registrations and sales by make and model for each state, county and city, and the Office Equipment Manufacturers Association tabulation of the sales of its members by

counties. The Bureau of the Census has approximated this service by sampling the number of radio and television sets, capital expenditures by industry classifications, and other useful data by counties and cities. These industry tabulations are useful in revealing performances of a company's salesmen in competition with others in the respective territories. The combined industry's sales and the company's salesmen's performances may be used effectively in reallocating selling effort and advertising. In the case of automobiles the sales of an individual make and model may be compared with the sales of competing makes and the total sales of cars in the same price classes by territories. One weakness of this method is that the total industry performance may not be perfect in various territories due to the allocation of effort by the several companies. Several studies have indicated this situation to be true. Another weakness is that such a potential does not provide information as to why the total sales should be higher in some areas than others, and hence fails to give adequate guidance in the distribution of advertising and promotional effort.

The fourth method is the use of a single measure of index by counties and cities by which a company's product potentials or yearly quotas may be distributed among its sales territories. Certain publishing companies have offered their magazine sales for this purpose. One magazine, at least, has built a special index which many companies use. Also, Census tabulations of population, households, and the like may be used as single indexes. The obvious weakness is the naive supposition that a single index can, with acceptable accuracy, reflect the complex influences which combine in different ways to affect the sales of different products and different brands in the same territories. Since the reaction of buyers to the characteristics of a company's products, or to a specific brand, may be different from their reaction to competing products and brands, it follows that sales may not hold the same relationship to income or other market characteristics as the index would indicate, or as the previous method's use of total industry sales might indicate. For example, income variation by areas is a much more potent factor in the sale of a high-quality, high-priced automobile, food or drug, than in their lower-quality, lower-priced counterparts. Indeed, for some products, sales are high where income is low and vice versa. The regional sales of many products are affected in different directions and degree by differences in urbanization of the population, climatic conditions such as temperature, rainfall and the like. Imagine anybody setting up a high Florida sales quota for long fur-lined rubber boots because the single index of Florida potential is high! Imagine relatively high quotas for furnace sales in Los Angeles or air coolers in Minneapolis because of dependence upon the single index. How does a single index apply alike to consumer goods and to industrial goods when it is obvious from Census data that many different industries are concentrated in regions peculiarly adapted to their presence? It should be pointed out, nevertheless, that for some

companies, subsequent tests have shown that a single index has provided a fairly adequate basis for establishing area potentials. Population, for example, is a good general measure of food consumption by areas. A single index, provided by sponsor, has proved to be a good measure of area markets for radios.

The fifth method is to put together a combination of measures of market conditions which are supposed to affect the sales of a particular type of product. A famous example was the attempt made by the late Henry Weaver to combine factors which would measure regional automobile sales potentials. Harvard University awarded him a prize for his labors and published his results. The weakness of this method, which Weaver recognized but did not overcome, is in knowing how to combine the various factors in proper form and with weights which would provide the best measure of regional demand conditions. This method, nevertheless, has been used by some companies.

The sixth method is to develop a combination of factors which affect the sales of a company's product by analysis of the varying product sales by territories. The separate effects of the factors upon sales are measured and combined by multiple correlation techniques. Thus, normals are obtained for the respective territories which take full account of the actual effect of varying conditions upon past sales. Only a few companies have used this method because the technique is, as yet, not known by many marketing research men. Its main weakness is that it is usually too complicated for laymen to use, although there are some very simple and usually adequate short cuts. Also, it cannot be used for determining potentials for launching a new product, since past sales are not available. However it can provide guidance in setting up tentative new-product potentials through the analysis of the sales of similar products.

The advantages of this method are important. It measures the direction of the effect of each factor and combines, with proper weights, the factors which affect the regional sales of a particular product or a differentiated brand. It eliminates multiplication of the same influence in two or more factors, multiplication which cannot be avoided by ordinary methods. It enables the testing and discarding of market measures which are irrelevant to the sales of a given product. It sets up normals which take account of the effect of the conditions in each area thus providing standards against which to measure performance and to distribute effort.

Moreover it makes possible the use of other factors of a different character which affect sales, such as variation between areas in prices, types of competition, types of customers to be chosen for coverage, relative amounts of selling and advertising effort, and others. Separate measurement of such effects are important in making possible the separate establishment of market potentials and quotas. An analyst thus may derive the comparative area potentials for the product based only on the separate effects of measured

market conditions. An analyst may also establish more reasonable quotas for the salesmen because proper allowances may be made for factors over which salesmen have no control such as management's allocation of effort of various kinds and quantities, management's choice of customer types, and others.

These two types of territory measures, the market potential and the salesman's quota, should be distinguished because they may be used for different purposes. The market potential is a guide to management in its distribution of effort and the determination of other policies. A comparison of actual sales performance with this type of potential provides an evaluation of management's ability to manipulate the resources at its command. The degree of variation in sales relative to the area normal market potential measures management's performance.

On the other hand, the comparison of sales with the quota established by use of all known variables not under the salesman's control provides a better measure of the salesman's performance, and a more realistic goal for him. By this method the quota is the normal volume to be expected in each area, taking into consideration market consumptive factors relating to the particular product or product line and in addition all the other factors which the management rather than the salesmen control. Thus the normal quotas become standards, and variation from the normal quotas measures the salesman's performances.

Although quotas established by this method are much more realistic or in keeping with actual conditions than the bald use of very high long-range market potentials, nevertheless, certain practical problems arise. In some areas there are special immeasurable conditions for which a practical allowance should be made. Secondly, a particular salesman may be so far below the normal quota in his territory for a particular product that he cannot be expected to correct the situation in a year. It is therefore necessary to have a review committee to set up the work quotas or goals for one year ahead. The duties of the quota committee may be as follows:

1. Reconcile analytically derived quotas with the need to have attainable goals for the salesmen for a stated future period—quarter-year, half-year, or year. This may be done by discussion with salesmen or regional managers.
2. Interpret the analytical quotas to the organization, explaining their nature as standards.
3. Gather ideas for improvement of the analysis, such as knowledge of additional factors not already test-measured or incorporated in the quotas.

From management's standpoint, products of the establishment of potentials and quotas by correlation analysis are indications of the effect of

varying the number of salesmen relative to potentials, or of varying the amount of advertising or of changing policies as to customer selection. It is a method of analyzing sales to find out what has actually happened under varying conditions. The method may also be applied to the analysis of sales increases and decreases in different areas in order to determine what changes in area factors outside or within the management's control are causing better sales increases in some areas than others. The effect of varying regional prices for some products may be analyzed. These are only a few of the possibilities offered by this type of analysis.

In conclusion we have come quite a distance in a subject of much interest to management. We have reviewed the time and place aspects of market estimation, distinguishing between the potential for the company and potentials for salesmen. In both we have distinguished between market potentials and quotas. We have reviewed the different methods of establishing potentials and quotas, indicating their good and weak points. Perhaps the most advanced method is that of correlation analysis which provides additional useful information to management, is relatively inexpensive as a method but as yet, is not well understood.

After 30 years of working in this whole area, one may look back to see that much progress has been made but much more needs to be done to help management in setting up potentials and quotas.

14/*The Significance of Social Stratification in Selling*

RICHARD P. COLEMAN

The article helps to clarify when and in what ways social class concepts can be used in developing a marketing plan which is based on the idea of market segmentation. It realistically states that other bases of segmentation may be more useful under certain conditions.

Dating back to the late 1940's, advertisers and marketers have alternately flirted with and cooled on the notion that W. Lloyd Warner's social class concept[1] is an important analytic tool for their profession. The Warnerian idea that six social classes constitute the basic division of American Society has offered many attractions to marketing analysts when they have grown dissatisfied with simple income categories or census-type occupational categories and felt a need for more meaningful classifications, for categorizations of the citizenry which could prove more relevant to advertising and marketing problems. However, in the course of their attempts to apply the class concept, marketers have not always found it immediately and obviously relevant. Sometimes it has seemed to shed light on advertising and merchandising problems and at other times it hasn't—with the result that many analysts have gone away disenchanted, deciding that social classes are not much more useful than income categories and procedurally far more difficult to employ.

It is the thesis of this writer that the role of social class has too often been misunderstood or oversimplified, and that if the concept is applied in a more sophisticated and realistic fashion, it will shed light on a great many problems to which, at first glance, it has not seemed particularly relevant. What we propose to do here, then, is discussed and illustrate a few of these more subtle, more refined and (it must be acknowledged) more complicated ways of applying social class analyses to marketing and advertising problems. In other words, the purpose of this paper is to clarify *when* and *in what ways* social class concepts are significant in selling, and to suggest when they might not be as significant as other concepts, or at least need to be used in concert with other analytic categories.

[1] See W. Lloyd Warner, Marchia Meeker, Kenneth Eells, *Social Class in America* (Chicago: Science Research Associates, 1949).

SOURCE: From Martin L. Bell (ed.), *Marketing: A Maturing Discipline* (Chicago: American Marketing Association, 1960), pp. 171-184. Richard P. Coleman: Social Research, Inc.

The Warnerian Social Classes

The six social classes which are referred to in this paper are those which W. Lloyd Warner and his associates have observed in their analyses of such diverse communities as Newburyport, Massachusetts,[2] Natchez, Mississippi,[3] Morris, Illinois,[4] Kansas City, Missouri,[5] and Chicago. These social classes are groups of people who are more or less equal to one another in prestige and community status; they are people who readily and regularly interact among themselves in both formal and informal ways; they form a "class" also to the extent that they share the same goals and ways of looking at life. It is this latter fact about social classes which makes them significant to marketers and advertisers.

Briefly characterized, the six classes are as follows, starting from the highest one and going down:[6]

1. The Upper-Upper or "Social Register" Class is composed of locally prominent families, usually with at least second or third generation wealth. Almost inevitably, this is the smallest of the six classes—with probably no more than one-half of one per cent of the population able to claim membership in this class. The basic values of these people might be summarized in these phrases: living graciously, upholding the family reputation, reflecting the excellence of one's breeding, and displaying a sense of community responsibility.

2. The Lower-Upper or "Nouveau Riche" Class is made up of the more recently arrived and never-quite-accepted wealthy families. Included in this class are members of each city's "executive elite", as well as founders of large businesses and the newly well-to-do doctors and lawyers. At best only one and one-half per cent of Americans rank at this level—so that all told, no more than 2 per cent of the population can be counted as belonging to one layer or the other of our Upper Class. The goals of people at this particular level are a blend of the Upper-Upper pursuit of gracious living and the Upper-Middle Class's drive for success.

3. In the Upper-Middle Class are moderately successful professional men

[2] See W. Lloyd Warner and Paul Lunt, *The Social Life of a Modern Community*, (New Haven: Yale University Press, 1941).

[3] See Allison Davis, Burleigh B. Gardner and Mary R. Gardner, *Deep South* (Chicago: University of Chicago Press, 1941).

[4] See W. Lloyd Warner and Associates, *Democracy in Jonesville*, (New York: Harper & Brothers, 1949).

[5] The writer's observation on the Kansas City social class system will be included in a forthcoming volume on middle age in Kansas City, currently being prepared for publication by the Committee on Human Development of the University of Chicago.

[6] Some of the phrases and ideas in this characterization have been borrowed from Joseph A. Kahl's excellent synthesizing textbook, *The American Class Structure* (New York: Rinehart & Company, Inc., 1957).

nd women, owners of medium-sized businesses and "organization men" at he managerial level; also included are those younger people in their twenties r very early thirties who are expected to arrive at this occupational status evel—and possibly higher—by their middle or late thirties (that is, they are oday's "junior executives" and "apprentice professionals" who grew up in uch families and/or went to the "better" colleges). Ten per cent of Americans are part of this social class and the great majority of them are ollege educated.

The motivating concerns of people in this class are success at career (which s the husband's contribution to the family's status) and tastefully reflecting his success in social participation and home decor (which is the wife's primary responsibility). Cultivating charm and polish, plus a broad range of interests—either civic or cultural, or both—are also goals of the people in this class, just as in the Lower-Upper. For most marketing and advertising purposes, this class and the two above it can be linked together into a single category of "upper status people". The major differences between them—particularly between the Upper-Middle and the Lower-Upper—are in degree of "success" and the extent to which this has been translated into gracious living.

4. At the top of the "Average Man World" is the Lower-Middle Class. Approximately 30 per cent or 35 per cent of our citizenry can be considered members of this social class. For the most part they are drawn from the ranks of non-managerial office workers, small business owners, and those highly-paid blue-collar families who are concerned with being accepted and respected in white-collar dominated clubs, churches, and neighborhoods. The key word in understanding the motivations and goals of this class is Respectability, and a second important word is Striving. The men of this class are continually striving, within their limitations, to "do a good job" at their work, and both men and women are determined to be judged "respectable" in their personal behavior by their fellow citizens. Being "respectable" means that they live in well-maintained homes, neatly furnished, in neighborhoods which are more-or-less on the "rightside of town". It also means that they will clothe themselves in coats, suits, and dresses from "nice stores" and save for a college education for their children.

5. At the lower half of the "Average Man World" is the Upper-Lower Class, sometimes referred to as "The Ordinary Working Class". Nearly 40 per cent of all Americans are in this class, making it the biggest. The proto-typical member of this class is a semi-skilled worker on one of the nation's assembly lines. Many of these "Ordinary Working Class" people make very good money, but do not bother with using it to become "respectable" in a middle-class way. Whether they just "get by" at work, or moonlight to make extra, Upper-Lowers are oriented more toward enjoying life and living well from day to day than saving for the future or caring what the middle class world thinks of them. They try to "keep in step with the

times" (indeed, one might say the "times" are more important than the "Joneses" to this class), because they want to be at least Modern, if not Middle Class. That is, they try to take advantage of progress to live more comfortably and they work hard enough to keep themselves safely away from a slum level of existence.

6. The Lower-Lower Class of unskilled workers, unassimilated ethnics, and the sporadically employed comprises about 15 per cent of the population but this class has less than 7 or 8 per cent of the purchasing power, and will not concern us further here. Apathy, fatalism, and a point of view which justifies "getting your kicks whenever you can" characterize the approach toward life, and toward spending money, found among the people of this class.

Now, we do not mean to imply by these characterizations that the members of each class are always homogeneous in behavior. To suggest such would be to exaggerate greatly the meaning of social classes. To properly understand them, it must be recognized that there is a considerable variation in the way individual members of a class realize these class goals and express these values.

For example, within the Upper Middle and Lower Upper Class, there is one group—called Upper Bohemians[7] by Russell Lynes—for whom cultural pursuits are more important than belonging to a "good" country club. As a result, the tastes in furniture, housing accommodations, and recreations exhibited by the men and women of this "issues-and-culture set"—leaning toward the avant garde and eclectic, as they do—are apt to be very different from those practised by the more conventional, bourgeois members of these status levels. Nevertheless, to both the Upper Bohemians and the Upper Conventionals, displaying "good taste" is quite important, with the differences between them not so much a question of good-versus-bad taste as one of whose form of good taste is preferred (though, to be sure, the Upper Bohemians are usually quite certain theirs is better).

Other sub-categories can be found in these higher classes and parallel kinds of sub-categories can be found in the Lower Middle and Upper Lower classes. Within the Upper Lower Class, for instance, there is a large number of people who are quite concerned with their respectability and spend much of their spare time in church trying to do something about it. Their respectability concerns are not quite like those of the Lower Middle Class, however, for they seem to care more about The Almighty's view of them than of their fellow man's. Thus, the Upper Lower Class might, for certain analytic purposes, be sub-divided into Church-Going and Tavern-Hopping segments, although this would by no means exhaust all possibilities of sub-categorization here.

All of this is by way of indicating that the millions of individuals who

[7] See Russell Lynes, *A Surfeit of Honey* (New York: Harper & Brothers 1957).

ompose each social class are not necessarily similar or identical in their onsumption patterns, even though they are of equal status socially and share set of goals and points of view which are class-wide. Thus far, the literature on social class in both marketing journals and sociological publications has emphasized the similarities of people within classes and rarely pointed out these variations. This has been necessary, of course, in order to properly introduce the concept and educate social scientists and marketers to its utility, but it has led on occasion to naive misuse of the concept and ultimate disillusion. In my view, it has come time for us to advance into a more sophisticated application of social class to marketing problems, which involves awareness of the differences as well as similarities within each class.

Social Class Versus Income

Let us proceed now to stating the basic significance of this class concept for people in the selling field. In the first place, it explains why income categories or divisions of Americans are quite often irrelevant in analyzing product markets, consumers' shopping habits and store preferences, and media consumption. For example, if you take three families, all earning around $ 8,000 a year, but each from a different social class, a radical difference in their ways of spending money will be observed.

An Upper-Middle Class family in this income bracket, which in this case might be a young lawyer and his wife or perhaps a college professor, is apt to be found spending a relatively large share of its resources on housing (in a "prestige" neighborhood), on rather expensive pieces of furniture, on clothing from quality stores, and on cultural amusements or club memberships. Meanwhile, the Lower-Middle Class family—headed, we will say, by an insurance salesman or a fairly successful grocery store owner, perhaps even a Diesel engineer—probably has a better house, but in not so fancy a neighborhood; it is apt to have as full a wardrobe though not so expensive, and probably more furniture though none by name designers. These people almost certainly have a much bigger savings account in the bank.

Finally, the Working Class family,—with a cross-country truck driver or a highly-paid welder as its chief wage-earner—is apt to have less house and less neighborhood than the Lower-Middle or Upper-Middle family; but it will have a bigger, later model car, plus more expensive appliances in its kitchen and a bigger TV set in its living room. This family will spend less on clothing and furniture, but more on food if the number of children is greater, as is likely. One further difference: the man of the house probably spends much more on sports, attending baseball games (for example), going hunting and bowling, and perhaps owning a boat of some description.

The wives in these three families will be quite noticeably different in the kind of department stores they patronize, in the magazines they read, and in the advertising to which they pay attention. The clothing and furniture they select for themselves and their families will differ accordingly, and also

because they are seeking quite different goals. This has become very clear in studies Social Research, Inc., has done for the *Chicago Tribune* on the clothing tastes of Chicagoland women, for the Kroehler Company on the place of furniture in American homes, and for MacFadden Publications on the purchasing patterns and motivations of their romance magazines' Working Class readers.[8] (These have been contrasted in turn with the motivations of Middle Class women who read service magazines.)

The Upper-Middle Class wife—even of the struggling young lawyer—usually buys all her public-appearance clothes at specialty shops or in the specialty departments of her community's best department stores; she feels constrained to choose her wardrobe according to rather carefully prescribed standards of appropriateness. In furnishing her home, she thoughtfully considers whether a given piece or a combination of pieces will serve as adequate testament to her aesthetic sensitivities, plus doing credit in turn to her husband's taste in wife-choosing. She pays careful attention to the dictates of the best shelter magazines, the "smart" interior decorators in town, the homes of other women in her class, and maybe that of the boss's wife.

The Lower-Middle Class woman is more single-mindedly concerned with furnishing her home so that it will be "pretty" in a way that suits her and hopefully might win praise from her friends and neighbors. She tries to get ideas from the medium-level shelter and service magazines and is perpetually depressed because her home isn't furnished as much like a dream house as she would like it to be. In this she is quite different from the Upper-Lower wife who is apt to care more about having a full array of expensive, gleaming white appliances in her kitchen than a doll's house of a living room. Where the Lower-Middle housewife usually has a definite style in mind which she's striving to follow, the Upper-Lower woman simply follows the lead of newspaper furniture advertising (and what she sees when window shopping) toward furniture which is "modern-looking", by which she means the "latest thing" that has hit the mass market.

A great many more examples of differences in consumption patterns by class levels could be given, but the principal ones have been well reported already—facetiously by Vance Packard and seriously by Pierre Martineau;[9] for further amplification on this point the latter source is recommended. The significance to merchandisers and advertisers of these findings about motivational differences between classes is fairly obvious, the major idea being that for many products, advertising appeals and merchandising techniques must be differentially geared to the points of view reflected in these three main social classes. Advertising of brands or goods aimed at a specific

[8] This study has been published under the name *Workingman's Wife* (Oceana Press: New York City, 1959) by Lee Rainwater, Richard P. Coleman, and Gerald Handel.

[9] See Pierre Martineau, *Motivation in Advertising* (New York: McGraw-Hill Book Company, 1957) and "Social Classes and Spending Behavior", *The Journal of Marketing*, Vol. 23, No. 2, October 1958, pp. 121-130.

class must take into account the motivations of that class, and not try to sell everything as if it were an Upper Class or Upper-Middle status symbol.

Up to now, we've been talking about product areas—clothing, furniture, and residential neighborhoods—where the relationship between social class and quality of goods purchased is highest. In these things the so-called "Quality Market" and the Upper Middle (and higher) markets coincide. That is, the purchasers of highest quality clothing and highest quality furniture are more nearly from the Upper-Middle and Upper social classes than from the highest income categories, and so on it goes down the hierarchy. The correlation between price of goods purchased and social class is relatively quite high in these product areas while the correlation between price paid and annual income is lower than one might expect.

There is another group of products which are not linked in such a direct way with social class, but neither are they linked with income categories in any obvious relationship. The current car market provides an instructive example of this situation, for the nature of the market cannot be grasped by using one or the other concept exclusively. What is happening in today's car market can only be understood when income categories are placed into a social class framework.

The "Overprivileged" as "Quality Market"

Within each social class group there are families and individuals whose incomes are above average for their class. The Upper-Lower family with an income above $7,000 a year—sometimes a product of both husband and wife working, and sometimes not—is an example of this. So, too, is the Lower-Middle Class business owner or salesman who makes more than $10,000 a year, but has no interest in either the concert or country clubs of Upper-Middledom and hence is still Lower Middle Class. The Upper-Middle Class couple with more than $25,000 a year at its disposal but no desire to play the "society game" of subscription balls or private schools is also in this category. These are what might be called the "overprivileged" segments of each class. They are not "overprivileged" in the absolute sense, of course; they are "overprivileged", however, relative to what is required or needed by families in their class. After they have met the basic expectations and standards of their group in the housing, food, furnishing, and clothing areas, they have quite a bit of money left over which is their equivalent of "discretionary income".

In much the same way, each class has its "underprivileged" members; in the Upper-Middle Class these are the younger couples who haven't made the managerial ranks yet, the college professors, the genteel professionals, and a few downwardly mobile people from high-status backgrounds who are trying to hang on to what fragments of status they have left—for the most part these people are below the $12,000-a-year mark and they can barely meet some of the basic requirements of Upper-Middle life, much

less experience any of its little luxuries; in the Lower-Middle Class these are the poorly paid bank tellers, the rows of bookkeepers in railroad offices, the school teachers with considerably more status aspiration than income; and in the Upper-Lower Class it is almost any family earning less than $4,500 or $5,000 a year, at today's rates of pay in metropolitan areas.

In the middle of each class's income range are its "average" members, families who are neither underprivileged nor overprivileged by the standards of their class. You might think of this as the Upper-Middle Class family between $12,000 and $20,000 a year, the Lower-Middle family in the $7,000-$9,000 range, and the Upper-Lower family near $6,000 per annum. However, this word of caution is necessary: a lot of people in the middle income range of their class see themselves as underprivileged because they are aspiring to become one of the "overprivileged" in their class or to move on up the ladder to a higher class.

The relevance of all this to the car market is that when you look at this particular market today, you find it is the "average" members of each class, whether Upper-Middle, Lower-Middle, or Upper-Lower, who constitute the heart of the Low-Priced Three's audience; these are the people who are buying Fords and Chevrolets this year and last, and probably next. No longer is the Ford and Chevrolet market just a lower-middle income market, or (in class terms) a Lower-Middle or a Lower Class market. Rather, it is recruited from the middle income group *within each* social class. Indeed, the $15,000-a-year Upper-Middle "organization man" is apt to choose a Ford or Chevy from the Impala-Galaxie level or else a top-price station wagon once he ventures into this market, whereas the average-income Lower-Middle man will settle for a middle-series Bel Air or Fairlane 500, and the "average-income" Upper Lower guy either splurges for an Impala or "sensibly" contents himself with the spartan Biscayne.

While this has been happening to the Low-Priced Three makes the heart of the medium-priced car market has relocated in the "overprivileged" segments of each class. Today, rich blue-collar workers are joining prosperous Lower-Middle Class salesmen and well-to-do Upper Middle Class business owners in buying Pontiacs, Buicks, Oldsmobiles, Chryslers, and even Cadillacs. In fact, what there is left of big-car lust in our society is found at peak strength among the "overprivileged" Upper-Lowers or else among men who have achieved higher status, but grew up as kids in the Upper-Lower class and have not forgotten their wide-eyed envy of the big car owner.

Finally, as you may have guessed by now, the compact car market's heart is to be found in the "underprivileged" segments of each class (here we are speaking of the market for a compact as a first car). The overwhelming majority of Rambler purchasers, Falcon buyers, and foreign economy car owners come from this socio-economic territory. Thus, it is not the really poor who are buying these cheapest, most economical cars—rather it is those who think of themselves as poor relative to their status aspirations

and to their needs for a certain level of clothing, furniture, and housing which they could not afford if they bought a more expensive car.

The market for compacts as second cars is somewhat more complicated in its socio-economic geography, being located in the middle range of the Upper-Middle Class, and the "overprivileged" segment of the Lower-Middle. The "overprivileged" Upper Middle may have one as a third car, but he prefers either a T-Bird, a foreign sports car, a Pontiac convertible, or a beat-up station wagon as his second car, while the "overprivileged" Upper Lower is apt to go for a used standard if he wants a second car.

If marketers and advertisers had assumed that the market for compacts was going to be the lowest-income or lowest-status members of our society, they would have seriously miscalculated in their merchandising and advertising approach. Rambler, for one, did not make this mistake. American Motors advertised its cars as "bringing sense into the auto market" and thus enabled people who bought one to pride themselves on the high-minded rationality they had displayed. Rambler owners, as they drive down the street, are not ashamed that they couldn't afford better—instead, as the company has told them to be, they are proud that they did not yield, like their neighbors, to base emotional desires for a car bloated in size beyond necessity and loaded in gadgetry beyond reason. Compact car owners have their own form of snobbery—what might be called "sensibility snobbery"—with which to content themselves and justify their purchase.

This analysis of the car market is one example of what I mean by the sophisticated application of social class concepts to marketing and advertising problems. There are many products and many brands which, like cars, are more nearly symbols of high status class within class than symbols of higher status per se. A color television set is such a product, or at least it was two years ago when Social Research, Inc., studied its market. At the time color television manufacturers were puzzled because sales were thinly spread throughout the income scale, without any noticeable increase in concentration until an extremely high level was reached. Furthermore, they were unable to see any particular relationship between social class and color set ownership, since about as many Upper-Lower Class people owned them as did Upper-Middles. However, when the two factors of income and class were put together, in the manner described above, it became clear that the color television market was concentrated among high-income or "over-privileged" members of each social class. Other products which bear this complicated relationship to class and income are the more costly brands and larger sizes of home appliances. Fairly expensive recreational equipment like outboard motor boats also tend to be in this category.

In summary, today's market for quality goods and quality brands is not necessarily drawn from what has historically been described as the "Quality Market" of Upper-Middle and Upper Class people, nor even necessarily from the highest income categories. Rather, in many instances, it is drawn

from those people within each social level who have the most discretionary income available for enjoying life's little extras above and beyond the requirements of their class. Every merchandiser and advertiser ought to take a good hard look at what he is selling and ask himself if it bears this particular relationship to the class and income picture. If his product does, and if his brand is one of the more expensive, then he should merchandise it not as if it were just for social climbers or for the upper classes, but rather as part of the Better Life, U.S.A. If, on the other hand, his brand is one of the least expensive, then he is not just selling to the poor, but rather to those in all classes who feel it is only sensible on their part to settle for a brand such as his and save the difference for other things which are more important in their statement of social class aspiration and identity.

Social Class Isn't Always Important

Now, to make the picture complete, it must be pointed out that Social Research, Inc., has found some products in which the income factor is all-important and the social class variable is relevant only to the extent that it is correlated with income. Perhaps the most perfect example of this is the market for air-conditioners in Southwestern cities. There, everybody—except the sickly and the extremely old-fashioned—agree that air conditioning one's home is imperative if summer is to be survived with any degree of comfort. Consequently the expensiveness of a family's air-conditioning equipment—whether centrally installed, or window units to the number of four, three, two or one—is directly correlated with family income. It is not merely a function of discretionary income—as in our example about purchase of medium-priced cars; it is instead almost completely a function of total annual income. If more Upper-Middles than Upper-Lowers are fully air-conditioned it is only because more of them can afford to be; it is not because Upper-Middles as a group are placing higher priority on the air-conditioned existence.

Undoubtedly air conditioners are not alone in being classless—so that one more thing the marketer who uses social class in a truly sophisticated way needs to understand is that there can be occasions when it is an irrelevant variable. Realizing this, he will not become disenchanted with social class when he finds a marketing problem where it does not shed light or where it does not seem pertinent. Of course, he will want to make sure that in advertising such a product there is indeed no need to take class into account. After all, some apparently classless products are properly sold to the market in a segmental approach, appealing first on one ground to one class, then on other grounds to another.

There are other products—and probably air conditioning is one of them and children's play clothes may be another—where this is not necessary. For such products some factor, such as physical comfort (in the one case) or simple durability (in the other), is so basic in the consumer's considera-

tion that all other motivations pale into insignificance beside it. There are even products, like beer, where the democratic approach—that is, a tone of "let's-all-be-good-fellows-together" is exactly right and segmental appeals or snob stories are all wrong.

Another aspect to the sophisticated employment of social class refers back to the point made earlier that social class groups are not always homogeneous. It must be recognized that at times a product's market is formed by "highbrows" from the Upper-Upper Class on down to the Lower-Middle, or by "suburbanites" and suburban-minded people of all classes—in which case the social class variable may confuse a market analysis more than clarify it.

Particularly must merchandisers and market analysts beware of equating "Class" with "Brow"; for they are not synonymous. For example, the Upper-Middle Class and those above it are mainly middlebrow in taste (veering toward an all-American lower-middlebrow level of preferences in television shows and advertising messages) even though the majority of highbrows are found at this level. At times advertisers have made the mistake of assuming that the Upper-Middle Class should be appealed to in a highly sophisticated fashion—and though this is just fine if the product itself is likely to appeal primarily to the Manhattanized type of Upper-Middle, it is not correct if it is expected to sell to the kind of doctor in Dubuque who enjoys a visit to New York every now and then but would never want to live there.

In short, not only must the sophisticated marketer abandon social class in favor of income categories on occasion in his analysis and interpretation of a market, he must recognize that at times both income and class are superseded in importance by divisions of the public into brow levels, by divisions into "high mobiles" and "low mobiles", innovators and non-innovators, inner-directed and other-directed, urbanites, suburbanites, exurbanites, ruralites, and Floridians, or what have you. Usually, of course, fullest understanding of a market will require that social class be linked in with whichever sub-categorization proves pertinent from among those in the catalogue just recited, much as income and class were linked together for fullest comprehension of the car market.

As a final point, let it be noted that the way of life and the goals of people in each social class are in perpetual flux. Neither the "who" of each class nor "what motivates them" are constants to be assumed without continual re-evaluation. Right now, particularly, it is very clear that our society is changing. Every year the collar-color line is breaking down further. More blue-collar workers are becoming Middle Class as well as middle income and Modern, and a white-collar position is less and less a guarantee of Lower-Middle status. As a consequence of this, the Lower-Middle Class is perhaps somewhat more "materialistic" in outlook and slightly less "respectability" conscious than it was 25 years ago, or even 8. Meanwhile, for men

and women to achieve Upper-Middle status without college background is becoming more and more difficult, so that this class is turning much more worldly-wise and well-read, much less conventionally bourgeois than it was in the zenith of Babbitt's day.

In short, the form of our society and its division into social classes is not fixed as of Yankee City in 1931, Jonesville in 1944, Kansas City in 1952, or St. Louis in 1960. We won't be able to say exactly the same things about either the classes themselves or their relationships to specific markets by next year at this time. This fact about the American class structure, that it is not static, that it is in the process of change, is in itself important to merchandisers, to advertisers, to anyone in selling. Among other things, it means that undoubtedly they have played a part in past changes and can play a leading role in directing future changes. But of more direct concern here, to the marketing analyst it means that if he allows his stratification concept to become dated, his use of it will cease as of that moment to be sophisticated.

15/Sales Forecasting : Key to Integrated Management

WILLIAM LAZER

Planning can not be accomplished without first preparing a valid sales forecast. This article points out how sales forecasting can be used as a way to effect an integration in the thinking of management as to what actions should be undertaken.

Business organizations are increasingly adopting the marketing management concept. This philosophy of business operation places greater emphasis on marketing planning and forces business executives to design marketing strategies and program marketing effort to achieve realistic and predetermined objectives.

Sales forecasting can aid management greatly in implementing the marketing management approach. It is a basis for developing co-ordinated and goal-directed systems of marketing action. The sales forecast is one of the vital tools of marketing planning since adequate planning and the effective deployment of marketing resources are based on sales forecasting data.

Sales forecasting promotes and facilitates the proper functioning of the many segments of a firm's total spectrum of business and marketing activities. It influences almost every other prediction of business operations. It is used in establishing budgets and marketing controls. Sales forecasts help determine various limiting conditions for management decisions and programs and are useful tools for co-ordinating the integral aspects of business operations. They provide bases for evaluating the functioning and productivity of various segments of business activity. They can guide marketing and other business action toward the achievement of implicit and explicit objectives.

This article investigates three aspects of sales forecasting as a key to integrated management action: (1) sales forecasting as a component of the marketing planning process, (2) sales forecasting as a focus for integrative planning, and (3) the basic components and procedures of a comprehensive sales forecasting program.

IN MARKETING PLANNING

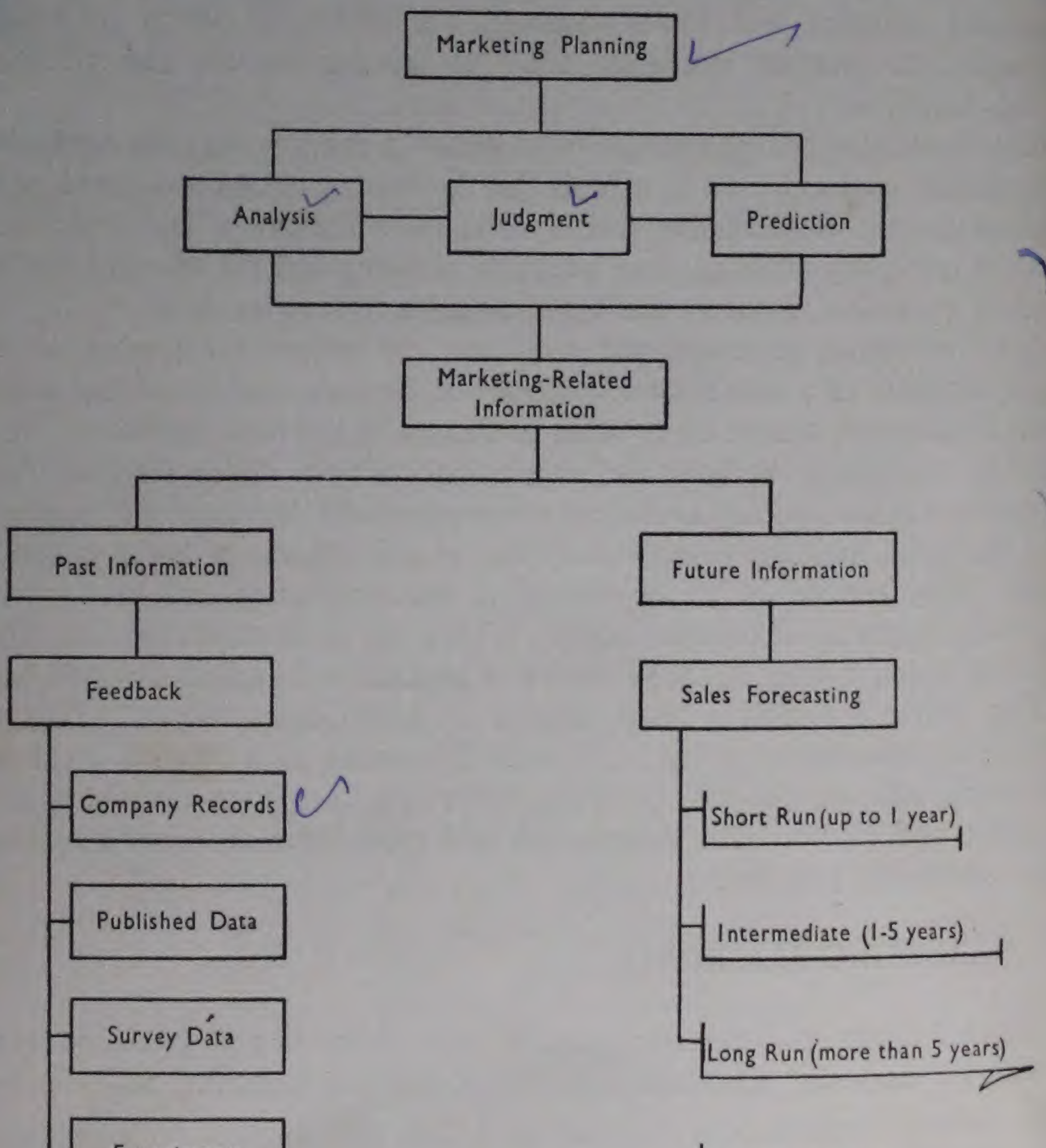
Figure 1 illustrates the stategic role of sales forecasting in gathering information for marketing planning. Effective planning of marketing activities can

SOURCE: From *Business Horizons*, vol. 2, Fall, 1959, pp. 61-67. William Lazer: Associate Professor, Michigan State University.

be achieved only if adequate marketing-related information is available. Marketing planning is concerned with the application of analysis and judgment to available information and the prediction of likely occurrences and trends during some future period.

Marketing-related information can refer to either the past or the future. Information about past activities is often referred to as factual information. Information about the future is anything but factual, and might be characterized as assumptive. Past information is available to every business if it has an adequate record-keeping process. It is also available from other secondary data sources, such as information reported by governmental bureaus, university research bureaus, and trade associations. Past information may also be assembled through the use of various primary data-gathering research tools, such as surveys and experiments.

Figure 1



Future information requires the utilization of forecasting techniques and processes. Nevertheless, it is based on past data and is usually the result of the application of predictive tools to available past information.

Whenever a business gathers future data, varying degrees of error are bound to exist. Regardless of the forecasting techniques used and the degree of sophistication achieved, future conditions will always deviate to some degree from the predictions of the forecasters. Thus, management must expect future information to contain some error.

For effective marketing planning, both types of information must be available for executive use. From a planning and decision-making point of view, future, or nonfactual, information may be more significant than information about the past. This becomes clear if one considers that plans and decisions made today are actually based on executive expectations of what will happen during some future period.

If we consider sales forecasting from the point of view of furnishing marketing-related information, we can state that management gathers information as a result of two complementary processes: feedback and sales forecasting. Feedback consists of relating information about past events and relationships back to management. Through the use of such factual data, management can adjust existing operations and plans and thereby improve the effectiveness of all business action.

Sales forecasting furnishes management with information about what market conditions will probably be like during a future period. Management can then use this informtaion as a basis for planning broad company goals and the strategies to achieve them. Sales forecasting data are used in establishing various types of potential volume and profit targets that become the bases for guiding and controlling operations.

Past and future information, however, are constantly blending. A sales forecast, although it furnishes future information, eventually takes the form of feedback information. Once this happens, a comparison may be made between actual and forecast sales for a specific period. Through such an audit, deviations may be noted and explanations sought for them. This information can, in turn, help refine the assumptions about future sales forecasts and increase the total effectiveness of the forecasting procedure.

The various predictions made may take the form of short-run sales forecasts of less than a year, intermediate forecasts of from one to five years, and long-run forecasts for periods of more than five years. Generally, the longer range the predictions, the greater the forecasting error.

IN INTEGRATIVE PLANNING

Another facet of sales forecasting and its role in marketing planning is its position in the integrative planning process. A sales forecast is a useful tool for integrating the external business environment with the internal forces

of the company. It reduces to workable management dimensions the external business environment over which management has relatively little control. It delimits those constraints that establish the boundaries within which a company must make decisions and operate and translates them into company programs.

Figure 2 portrays sales forecasting as an aid to integrative planning. It indicates the controllable, partially controllable, and noncontrollable factors that management should integrate and take into account in making effective sales forecasts.

The noncontrollable forces determine the broad environmental limits within which the company will operate. These factors include cultural forces, the economic environment, demographic forces, political factors, ethical and social forces, and various international conditions. They cannot be influenced to any degree by company action; at best, they may be recognized and appraised in an intelligent manner.

On Figure 2, broken lines separate the competitive environment and technological factors from other noncontrollable factors. This is to indicate that management action may have some influence over at least these two external forces, which are considered partially controllable factors. However, even though company action can affect competition and technology, the forces *beyond* company control generally have a more significant impact.

As forecasts become longer run in nature, the necessity of recording the existing external climate becomes more imperative since, in the future, it will be these noncontrollable factors that set the over-all constraints and boundaries within which companies survive and grow or fail. Through an evaluation and projection of external forces, management attempts to make realistic assumptions about the future environment. These assumptions about noncontrollable and partially controllable factors are the foundations of sales forecasts, and intelligent sales predictions can be made only by implicitly or explicitly assuming relationships about these factors.

Management should not consider this initial step of determining the external company environment as merely a theoretical exercise that is of little use in practical sales forecasting. The external variables are factors that must be dealt with practically and realistically. Their influence cannot be ignored.

As an example of the importance of external forces, consider the development of a controlled shopping center. Several years may elapse from the initiation of the original idea and the first inquiry concerning site location until the actual opening of the center. Choices must be made from among alternative sites, and considerable negotiations may follow to obtain the property and construct and finance the center. Then there are a host of operating details to attend to, including the actual leasing of stores.

The profitability of the total investment and the sales realized by retail

stores in the shopping center will be affected by external forces. Existing and potential competition, for example, can have great influence on future sales. Demographic and economic forces in the form of population shifts and income trends will shape the retail sales potential of the center. Existing and potential industrial development of the surrounding territory will influence employment and income and will be reflected in marketing opportunity.

Municipal, state, and federal regulations will have an impact on future pricing tactics, on the use of various promotional devices including trading stamps, on store hours, and even on the types of merchandise that may be sold in particular kinds of stores.

Other examples could be presented concerning such industries as wood products, chemicals, mining, petroleum, transportation, the power industry, and communications.

After determining the external business climate for a future period, the sales forecaster must estimate the impact that internal business factors will make on potential markets. This involves an evaluation of those factors over which the company has direct control. They can be adjusted over the longer run by the company itself.

For an effective forecast, the company's know-how, its financial position, the plant capacity, the material resources and personnel available, and the company's reputation, image, and position in the market place must all be evaluated. The market position that a company eventually earns and the sales that it achieves will depend on the impact made by the internal business factors as they are combined into planned management programs carried out within the external business system. A consideration of both climates, external and internal, will give management some guides by which to judge the potential sales opportunity for a company. Through the use of various analyses and by the application of sound judgment, management may map out a company's future sales position.

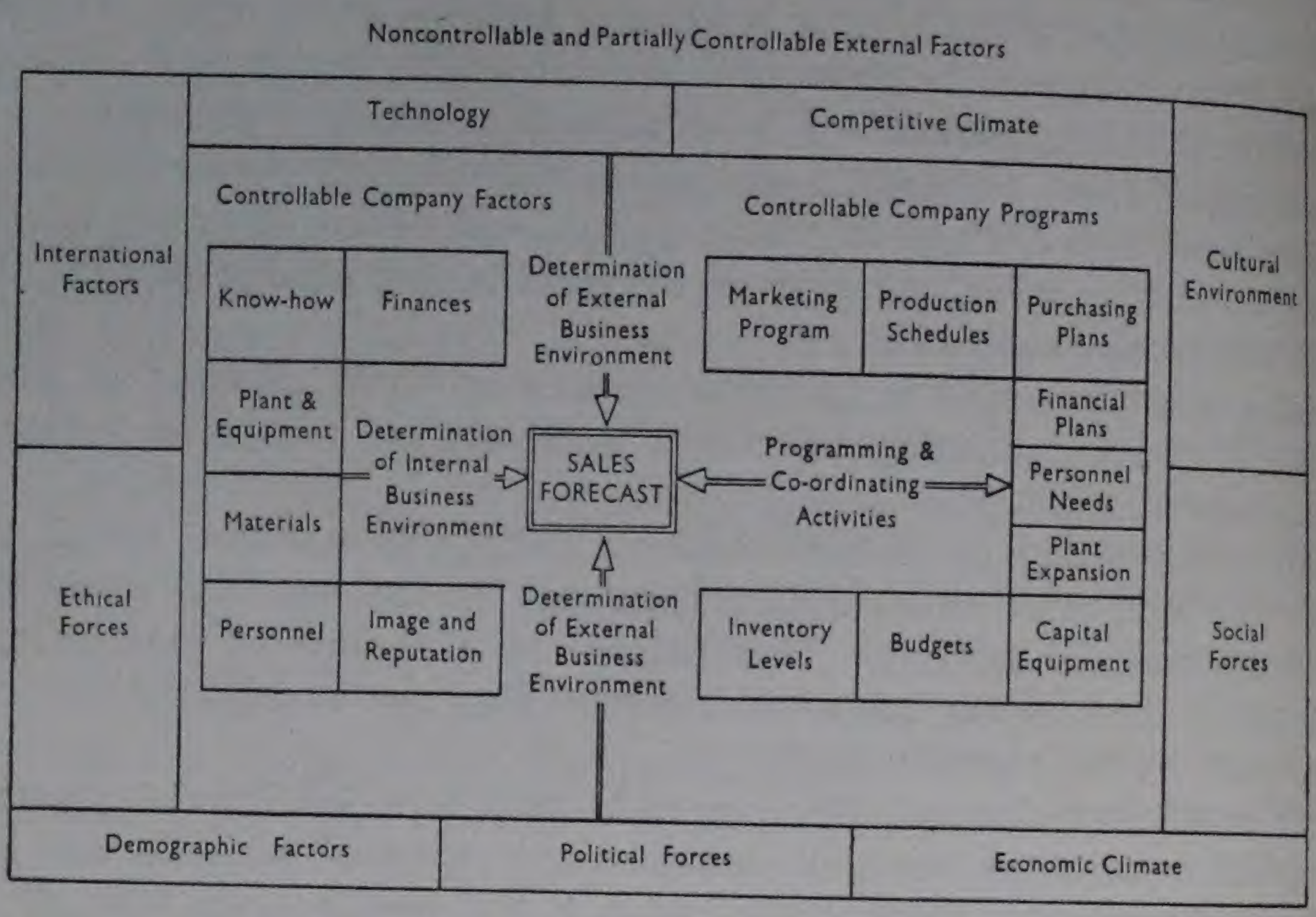
Thus, sales forecasting helps integrate the management-controllable and management-noncontrollable factors, or the given elements of a total business system within which the company operates and the internal factors of the business itself.

The sales forecast is also a device by means of which management may integrate its objectives, its operating programs, and its targets with potential market opportunity. This can be done by translating the sales forecast into specific profit and sales-volume goals to be realized in a given future period of time. The sales forecast thus becomes a basis for marketing programs, purchasing plans, financial budgets, personnel needs, production schedules, plant and equipment requirements, expansion programs, and perhaps most other aspects of management programming.

The right half of Figure 2 presents sales forecasting as a vehicle for translating the noncontrollable, partially controllable, and internal business environments into specific controllable management programs. The figure

Sales Forecasting : A Focus for entegrative Planning

Figure 2



also emphasizes the interrelationships between sales forecasts and company programs.

FORECASTING PROGRAM

Figure 3 outlines the elements of a total sales forecasting program. Four major stages of forecasting, the specific procedures to be followed, and their sequence are presented. These stages are: assembling the forecasting information; evaluating and projecting the data; applying the sales forecast operationally; and auditing the forecast. These four steps are broken down further, and some of the techniques that may be utilized at each stage and the results achieved are described. Figure 3 starts with the noncontrollable business environment and internal business climate and works down through the various predictions about controllable business plans, programs, and objectives.

The first step in a comprehensive sales forecasting program is assembling forecasting information. This involves the recognition of noncontrollable and partially controllable environments through observation and listing of significant external factors. The result is the identification of pertinent

Figure 3

A tatal Sales Forecasting Program

Stages of Process	Techniques	Results
Assembling Information		
Recognize noncontrollable and partially controllable business environment	Observe and list significant external factors	Identification of pertinent cultural, social, economic, political, demographic, competitive, ethical, international, technological forces
Gather information about noncontrollable and partially controllable forces	Investigate outside sources of information	Selection and gathering of data from government, industry, university research, Federal Reserve Board, company records
Gather information about controllable forces	Investigate company records	Selection of relevant company forecasting information
Evaluating and Projecting Data		
Analyze data	Apply analytical tools: time series analysis, least squares, simple correlation, multiple correlation, input-output tables, breakeven charts	Determination of patterns and relationships: lead and lag indicators, cycles, seasonal indexes, trend lines, covariation
Forecast Future sales	Employ extrapolation, constant percentage of increase, end-use analysis, executive opinion, historical analogy, panel of experts, grass-roots techniques, surveys, models, experiments, samples, hunches, judgment, and crystal ball.	Prediction and definition of future dollar sales, unit sales, maximum and minimum ranges
Operationally Applying Forecast		
Refine sales forecast	Break sales down by volume and profit control units: product lines, territories, customers, salesmen	Establishment of specific sales targets

Translate specific targets into operational programs	Establish and co-ordinate plans: marketing program, production schedules, purchasing plans, financial requirements, personnel needs, plant expansion, capital equipment budgets, inventory levels	Identification of controllable business environment

Auditing the Forecast

Review forecast	Compare actual and forecast sales regularly and analyze discrepancies	Determination of reasons for deviations
Modify forecast and forecasting procedures	Re-evaluate projections and adjust forecasting techniques	More accurate sales forecasting

social, cultural, ethical, economic, political, demographic, international, technological, and competitive forces that will influence the projections.

Next, information can be assembled about these noncontrollable factors and an investigation made of such outside sources of information as governments, industries, and universities.

The third step in assembling forecasting information is that of gathering information about the controllable company environment, which involves research into company records. This should result in the selection of relevant company forecasting information.

After forecasting information has been assembled, the data must be evaluated and projected. This activity has two components: analyzing the data and making the actual forecast. To analyze the data, such analytical tools as time series analysis, least squares methods of fitting a straight line, fitting curves, simple and multiple correlation, the use of input-output tables, and breakeven charts may be used. This leads to the determination of patterns and relationships through lead and lag indicators, cycles, seasonal indexes, trend lines, and measures of covariation,

The actual sales projections may be made through extrapolation, a straight percentage increase in sales, executive opinion polls, end-use analysis, historical analogy, a panel of experts, the grass-roots approach, samples and surveys, models, experiments, hunches, judgments, and the oft-used crystal ball. After these projections have been made, the prediction and definition of future dollar and unit sales, and maximum and minimum sales ranges is possible.

Then the forecast must be applied operationally, which involves refining the sales forecast. This is done by breaking it down on the basis of volume and profit control units by product lines, salesmen, customers, territories, and other managerial units. Specific sales targets can thus be established,

and sales forecasting data become the basis for programming marketing, production, purchasing, finance, plant expansion, capital equipment acquisition, personnel, and inventory needs. Controllable business programs have now been really determined.

The last step in a comprehensive sales forecasting program is that of auditing the forecast. This involves reviewing the forecast by comparing actual and forecast sales and analyzing any deviations or discrepancies. The purpose here is to determine the reasons for the deviations. Then future forecasts and even the forecasting techniques can be modified. The end result is more accurate sales forecasts.

The total sales forecasting process is one of refinement. It starts with the more general factors—the external noncontrollable environment and the internal business environment—quantifies them, and finally establishes specific operational goals and targets.

Marketing planning often suffers because management does not develop an effective sales forecasting program. One of the great inducements to ignore or neglect sales forecasting is the difficulty of making predictions. It is a trying task for anyone to try to determine future relationships and their implications for potential sales. It is much more comfortable to turn to the consideration of current operating problems, which are more concrete, are somewhat easier to grasp, and for which some corrective action may be initiated almost immediately.

However, professional marketing management cannot afford to neglect the sales forecasting process. It must become concerned with the development of well co-ordinated, planned, and forceful systems of business action. It must plan the use of company resources so that a firm can establish itself in the market place and grow.

The future marketing climate is likely to be one of keener competition, an exhilarating pace of market change, heavier fixed costs, and an increasing emphasis on innovation. Adequate marketing planning will become the foundation for integrated marketing action. Since one of the basic components of effective marketing planning is sales forecasting, it seems obvious that in the future an increasing amount of time and resources will be spent by companies in developing more adequate sales forecasts.

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IV/PLANNING AND DECISION-MAKING IN MARKETING

16/Long-range Planning

PETER F. DRUCKER

Long-range planning is defined as the organized process of making entrepreneurial decisions. Two pertinent questions relating to "long-range planning" are asked —and answered : (1) What it is and what it is not; and (2) the need for and requirements of long-range planning in terms of the "characteristics of the process itself and in terms of its major specific new-knowledge content".

A brief statement of why long-range planning can be considered a major opportunity and challenge for scientific management is also presented.

I

It is easier to define long-range planning by what it is not rather than by what it is. Three things in particular, which it is commonly believed to be it emphatically is not.

1. *First it is not "forecasting".* It is not masterminding the future, in other words. Any attempt to do so is foolish; human beings can neither predict nor control the future.

If anyone still suffers from the delusion that the ability to forecast beyond the shortest time span is given to us, let him look at the headlines in yesterday's paper, and then ask himself which of them he could possibly have predicted ten years ago.

Could he have forecast that by today the Russians would have drawn even with us in the most advanced branches of physical sciences and of engineering?

Could he have forecast that West Germany in complete ruins and chaos then would have become the most conservative country in the world and one of the most productive ones, let alone that it would become very stable politically?

Could he have forecast that the Near East would become a central trouble spot, or would he have had to assume that the oil revenues there would take care of all problems?

This is the way the future always behaves. To try to mastermind it is therefore childish, we can only discredit what we are doing by attempting it. We must start out with the conclusion that forecasting is not respectable and not worthwhile beyond the shortest of periods. *Long-range planning is necessary precisely because we cannot forecast.*

But there is another, and even more compelling reason why forecasting is not long-range planning. Forecasting attempts to find the most probable

SOURCE: From *Management Science*, vol. 5, April, 1959, pp. 238-249. Peter F. Drucker : Professor of Management, New York University.

course of events, or at best, a range of probabilities. But the entrepreneurial problem is the unique event that will change the possibilities, for the entrepreneurial universe is not a physical but a value-universe. Indeed the central entrepreneurial contribution and the one which alone is rewarded with a profit, is to bring about the unique event, the *innovation* that changes the probabilities.

Let me give an example—a very elementary one which has nothing to do with innovation but which illustrates the importance of the improbable even for purely adaptive business-behavior.

A large coffee distributor has for many years struggled with the problem of the location and capacity of its processing plants throughout the country. It had long been known that coffee prices were as important a factor in this, as location of market, volume, or transportation and delivery strategy. Now if we can forecast anything, it is single-commodity prices; and the price forecasts of the company economists have been remarkably accurate. Yet the decisions on plant location and capacity based on these forecasts have again and again proven costly blunders. Extreme pricing events, the probability of which at any one time was exceedingly low, had, even if they lasted only for a week at a time, impact on the economics of the system that were vastly greater than that of the accurately forecast "average". Forecasting, in other words, obscured economic reality. What was needed (as the Theory of Games could have proven) was to look at the extreme possibilities, and to ask, "which of these can we not afford to disregard"?

The only thing atypical in this example is that it is so simple. Usually things are quite a bit more complex. But despite its (deceptive) simplicity it shows why forecasting is not an adequate basis even for purely adaptive behavior, let alone for the entrepreneurial decisions of long-range planning.

2. The next thing to be said about what long-range planning is not, is that it does not deal with future decisions. It deals with the *futurity of present decisions.*

Decisions exist only in the present. The question that faces the long-range planner is not what we should do tomorrow. It is what do we have to do today to be ready for an uncertain tomorrow. The question is not what will happen in the future. It is: what futurity do we have to factor into our present thinking and doing, what time spans do we have to consider, and how do we converge them to a simultaneous decision in the present?

Decision-making is essentially a time machine which synchronizes into one present a great number of divergent time spans. This is, I think, something which we are only learning now. Our approach today still tends toward the making of plans for something we will decide to do in the future. This may be a very entertaining exercise, but it is a futile one. Again, long-range planning is necessary because we can make decisions only *in* the present; the rest are pious intentions. And yet we cannot make decisions

for the present alone; the most expedient, most opportunist decision—let alone the decision not to decide—may commit us on a long-range basis, if not permanently and irrevocably.

3. Finally, the most common misconception of all, *long-range planning is not an attempt to eliminate risk.* It is not even an attempt to minimize risk. Indeed any such attempt can only lead to irrational and unlimited risk and to certain disaster.

The central fact about economic activity is that, by definition, it commits present resources to future and therefore highly uncertain expectations. To take risk is therefore the essence of economic activity. Indeed one of the most rigorous theorems of economics (Boehm-Bawerk's Law) proves that existing means of production will yield greater economic performance only through greater uncertainty, that is, through greater risk.

But while it is futile to try to eliminate risk, and questionable to try to minimize it, it is essential that the risks taken be the *right risks.* The end result of successful long-range planning must be a capacity to take a greater risk; for this is the only way to improve *entrepreneurial* performance. To do this, however, we must know and understand the risks we take. We must be able to rationally choose among risk-taking courses of action rather than plunge into uncertainty on the basis of hunch, hearsay or experience (no matter how meticulously quantified).

Now I think we can attempt to define what long-range planning is. It is the continuous process of making *present entrepreneurial* (*risk taking*) *decisions* systematically and with the best possible knowledge of their futurity, organizing systematically *the efforts* needed to carry out these decisions, and measuring the results of these decisions against the expectations through *organized, systematic feed-back.*

II

"This is all very well", many experienced businessmen might say (and do say). "But why make a production out of it? Isn't this what the entrepreneur has been doing all along, and doing quite successfully? Why then should it need all this elaborate mumbo-jumbo? Why should it be an organized, perhaps even a separate activity? Why in other words, should we even talk about 'long-range planning', let alone do it?"

It is perfectly true that there is nothing very new to entrepreneurial decisions. They have been made as long as we have had entrepreneurs. There is nothing new in here regarding the essential of economic activity. It has always been the commitment of present resources to future expectations; and for the last three hundred years this has been done in contemplation of change. (This was not true earlier. Earlier economic activity was based on the assumption that there would be no change, which assumption was institutionally guarded and defended. Altogether up to the seventeenth century it was the purpose of all human institutions to prevent change.

The business enterprise is a significant and rather amazing novelty in that it is the first human institution having the purpose of bringing about change).

But there are several things which are new; and they have created the need for the organized, systematic, and above all, specific process that we call "long-range planning".[1]

1. The time span of entrepreneurial and managerial decisions has been lengthening so fast and so much as to make necessary systematic exploration of the uncertainty and risk of decisions.

In 1888 or thereabouts, an old and perhaps apocryphical story goes, the great Thomas Edison, already a world figure, went to one of the big banks in New York for a loan on something he was working on. He had plenty of collateral and he was a great man; so the vice-presidents all bowed and said "Certainly, Mr. Edison, how much do you need?" But one of them, out of idle curiosity asked, "Tell me, Mr. Edison, how long will it be before you have this new product?" Edison looked him in the eye and said, "Son, judging from past experience, it will be about eighteen months before I even know whether I'll have a product or not." Whereupon the vice-presidents collapsed in a body, and, despite the collateral, turned down the loan application. The man was obviously mad; eighteen months of uncertainty was surely not a risk a sane businessman would take!

Today practically every manager takes ten or twenty year risks without wincing. He takes them in product development, in research, in market development, in the development of a sales organization, and in almost anything. This lengthening of the time span of commitments is one of the most significant features of our age. It underlies our economic advances. But while quantitative in itself, it has changed the qualitative character of entrepreneurial decisions. It has, so to speak, converted time from being a dimension in which business decisions are being made into an essential element of the decisions themselves.

2. Another new feature is the speed and risk of innovation. To define what we mean by this term would go far beyond the scope of this paper.[2]

But we do not need to know more than that industrial research expenditures (that is, business expenditures aimed at innovating primarily peacetime products and processes) have increased in this country from less than $100 million in 1928 to $7 or 8 billion in 1958. Clearly, a technologically slow-moving, if not essentially stable economy has become one of violent technological flux, rapid obsolescence and great uncertainty.

[1] "Long-range planning" is not a term I like or would have picked myself. It is a misnomer—as are so many of our terms in economics and management, such as "capitalism", "automation", "operations research", "industrial engineering", or "depreciation". But it is too late to do anything about the terms; it has become common usage.

[2] For a discussion see my new book *The Landmarks of Tomorrow* (Harper and Brothers, New York, 1958).

3. Then there is the growing complexity both of the business enterprise internally, and of the economy and society in which it exists. There is the growing specialization of work which creates increasing need for common vision, common understanding, and common language, without which top management decisions, however right, will never become effective action.

4. Finally—a subtle, but perhaps the most important point—the typical businessman's concept of the basis of entrepreneurial decision is, after all, a misconception.

Most businessmen still believe that these decisions are made by "top management". Indeed practically all text books lay down the dictum that "basic policy decisions" are the "prerogative of top management". At most, top management "delegates" certain decisions.

But this reflects yesterday's rather than today's reality, let alone that of tomorrow. It is perfectly true that top management must have the final say, the final responsibility. But the business enterprise of today is no longer an organization in which there are a handful of "bosses" at the top who make all the decisions while the "workers" carry out orders. It is primarily an organization [3] of professionals of highly specialized, knowledge exercising autonomous, responsible judgment. And every one of them—whether manager or individual expert contributor—constantly makes truly entrepreneurial decisions, that is, decisions which affect the economic characteristics and risks of the entire enterprise. He makes them not by "delegation from above" but inevitably in the performance of his own job and work.

For this organization to be functioning, two things are needed: knowledge by the entire organization what the direction, the goals, the expectations are; and knowledge by top management of what the decisions, commitments, and efforts of the people in the organization are. The needed focus—one might call it a *model of the relevants in internal and external environment*—only a "long-range plan" can provide.

One way to summarize what is new and different in the process of entrepreneurial decision-making is in terms of information. The amount, diversity and ambiguity of the information that is beating in on the decision-maker have all been increasing so much that the built-in experience reaction that a good manager has cannot handle it. He breaks down; and his breakdown will take either of the two forms known to any experimental psychologists. One is withdrawal from reality, i.e., "I know what I know and I only go by it; the rest is quite irrelevant and I won't even look at it". Or there is a feeling that the universe has become completely irrational so that one decision is as good as the other, resulting in paralysis. We see both in executives who have to make decisions today. Neither is likely to result in rational or in successful decisions.

[3] For a discussion of this "new organization" see again my *The Landmarks of Tomorrow* mentioned above.

There is something else managers and management scientists might learn from the psychologists. Organization of information is often more important to the ability to perceive and act than analysis and understanding of the information. I recall one experience with the organization of research-planning in a pharmaceutical company. The attempt to analyze the research decisions—even to define alternatives of decisions—was a dismal failure. In the attempt, however, the decisions were classified to the point where the research people could know what kind of a decision was possible at what stage. They still did not know what factors should or should not be considered in a given decision nor what its risks were. They could not explain why they made this decision rather than another one, nor spell out what they expected. But the mere organization of this information enabled them again to apply their experience and to "play hunches"—with measurable and very significant improvement in the performance of the entire research group.

"Long-range planning" is more than organization and analysis of information; it is a decision-making process. But even the information job cannot be done except as part of an organized planning effort—otherwise there is no way of determining which information is relevant.

III

What then are the requirements of long-range planning? We cannot satisfy all of them as yet with any degree of competence; but we can specify them.

Indeed, we can—and should—give two sets of specifications: One in terms of the characteristics of the process itself; another in terms of its major and specific new-knowledge content.

1. Risk-taking entrepreneurial decisions, no matter whether made rationally or by tea-leaf reading, always embody the same eight elements:

a. Objectives. This is, admittedly, an elusive term, perhaps even a metaphysical one. It may be as difficult for Management Science to define "objectives" as it is for biology to define "life". Yet, we will be as unable to do without "objectives" as the biologists are unable to do without "life". Any entrepreneurial decision, let alone the integrated decision-system we call a "long-range plan", has objectives, consciously or not.

b. Assumptions. These are what is believed by the people who make and carry out decisions to be "real" in the internal and external universe of the business.

c. Expectations. The future events or results considered likely or attainable.

These three elements can be said to *define the decision.*

d. Alternative courses of action. There never is—indeed, in a true uncertainty situation there never can be—"one right decision". There cannot even be "one best decision". There are always "wrong decisions", that is, decisions inadequate to the objectives, incompatible with the assumptions, or grossly improbable in the light of the expectations. But once these have

been eliminated, there will still be alternatives left—each a different configuration of objectives, assumptions and expectations, each with its own risks and its own ratio between risks and rewards, each with its own impact, its specific efforts and its own results. Every decision is thus a value-judgment—it is not the "facts that decide"; people have to choose between imperfect alternatives on the basis of uncertain knowledge and fragmentary understanding.

Two alternatives deserve special mention, if only because they have to be considered in almost every case. One is the alternative of no action (which is, of course, what postponing a decision often amounts to); the other is the very important choice between adaptive and innovating action —each having risks that differ greatly in character though not necessarily in magnitude.

e. The next element in the decision-making process is the *decision itself.*

f. But there is no such thing as one isolated decision; every decision is, of necessity, part of a *decision-structure.*

Every financial man knows, for instance, that the original capital appropriation on a new investment implies a commitment to future and usually larger-capital appropriations which, however, are almost never as much as mentioned in the proposal submitted. Few of them seem to realize, however, that this implies not only a positive commitment but also, by mortgaging future capital resources, limits future freedom of action. The structuring impact of a decision is even greater in respect to allocations of scarce manpower, such as research people.

g. A decision is only pious intention unless it leads to action. Every decision, therefore, has an *impact stage.*

This impact always follows Newton's Second Law, so to speak; it consists of action and reaction. It requires effort. But it also dislocates. There is, therefore, always the question: what effort is required, by whom, and where? What must people know, what must they do and what must they achieve? But there is also the question—generally neglected—what does this decision do to other areas? Where does it shift the burden, the weaknesses, and the stress points; and what impact does it have on the outside; in the market, in the supply structure, in the community, and so on?

h. And, finally, there are *results.*

Each of these elements of the process deserves an entire book by itself. But I think I have said enough to show that both, the process itself and each element in it, are *rational,* no matter how irrational and arbitrary they may appear. Both the process and all its elements can therefore be defined, can be studied and can be analyzed. And both can be improved through systematic and organized work. In particular, as in all rational processes, the entire process is improved and strengthened as we define, clarify and analyze each of its constituent elements.

2. We can also, as said above, describe long-range planning in terms of its specific new-knowledge content.

Among the areas where such new knowledge is particularly cogent, might be mentioned:

a. The time dimensions of planning. To say "long-range" or "short-range" planning implies that a given time span defines the planning; and this is actually how businesses look at it when they speak of a "five-year plan" or a "ten-year plan". But the essence of planning is to make present decisions with knowledge of their futurity. It is the futurity that determines the time span, and not vice versa.

Strictly speaking, "short-range" and "long-range" do not describe time spans but stages in every decision. "Short-range" is the stage before the decision has become fully effective, the stage during which it is only "costs" and not yet "results". The "short-range" of a decision to build a steel mill are the five years or so until the mill is in production. And the "long-range" of any decision is the period of expected performance needed to make the decision a successful one—the twenty or more years above break-even point operations in the case of the steel mill, for instance.

There are limitations on futurity. In business decisions the most precise mathematical statement is often that of my eighth grade teacher that parallels are two lines which do not meet this side of the school yard. Certainly, in the expectations and anticipations of a business the old rule of statistics usually applies that anything beyond twenty years equals infinity; and since expectations more than twenty years hence have normally a present value of zero, they should receive normally only a minimal allocation of present efforts and resources.

Yet it is also true that, if future results require a long gestation period, they will be obtained only if initiated early enough. Hence, long-range planning requires knowledge of futurity: what do we have to do today if we want to be some place in the future? What will not get done at all if we do not commit resources to it today?

If we know that it takes ninety-nine years to grow Douglas firs in the Northwest to pulping size, planting seedlings today is the only way we can provide for pulp supply in ninety-nine years. Some one may well develop some speeding-up hormone; but we cannot bank on it if we are in the paper industry. It is quite conceivable, may indeed be highly probable, that we will use trees primarily as a source of chemicals long before these trees grow to maturity. We may even get the bulk of paper supply thirty years hence from less precious, less highly structured sources of cellulose than a tree, which is the most advanced chemical factory in the plant kingdom. This simply means, however, that our forests may put us into the chemical industry some time within the next thirty years; and we had better learn now something about chemistry. If our paper plants depend on Douglas fir,

our planning cannot confine itself to twenty years, but must consider ninety-nine years. For we must be able to say whether we have to plant trees today, or whether we can postpone this expensive job.

But on other decisions even five years would be absurdly long. If our business is buying up distress merchandise and selling it at auction, then next week's clearance sale is "long-range future"; and anything beyond is largely irrelevant to us.

It is the nature of the business and the nature of the decision which determine the time-spans of planning.

Yet the time spans are not static or "given". This time decision itself is the first and a highly important risk-taking decision in the planning process. It largely determines the allocation of resources and efforts. It largely determines the risks taken (and one cannot repeat too often that to postpone a decision is in itself a risk-taking and often irrevocable decision). Indeed, the time decision largely determines the character and nature of the business.

b. Decision structure and configuration. The problem of the time dimension is closely tied in with that of decision structure.

Underlying the whole concept of long-range planning are two single insights. We need an integrated decision structure for the business as a whole. There are really no isolated decisions on a product, or on markets, or on people. Each major risk-taking decision has impact throughout the whole; and no decision is isolated in time. Every decision is a move in a chess game, except that the rules of enterprise are by no means as clearly defined. There is no finite "board" and the pieces are neither as neatly distinguished nor as few in number. Every move opens some future opportunities for decision, and forecloses others. Every move, therefore, commits positively and negatively.

Let me illustrate these insights with a simple example, that of a major steel company today.

I posit that it is reasonably clear to any student of technology (not of steel technology but of technology in general) that steelmaking is on the threshold of major technological change. *What* they are perhaps the steelmaker knows, but *that* they are I think any study of the pattern, rhythm, and I would say morphology of technological development, might indicate. A logical—rather than metallurgical—analysis of the process would even indicate *where* the changes are likely to occur. At the same time, the steel company faces the need of building new capacity if it wants to keep its share of the market, assuming that steel consumption will continue to increase. A decision to build a plant today, when there is nothing but the old technology available, means in effect that for fifteen to twenty years the company cannot go into the new technology except at prohibitive cost. It is very unlikely, looking at the technological pattern, that these changes will be satisfied by minor modifications in existing facilities; they are likely to require new facilities to a large extent. By building today the company

closes certain opportunities to itself, or at least it very greatly raises the future entrance price. At the same time, by making the decision to postpone building, it may foreclose other opportunities such as market position, perhaps irrevocably. Management therefore has to understand—without perhaps too much detail—the location of this decision in the continuing process of entrepreneurial decision.

At the same time, entrepreneurial decisions must be fundamentally expedient decisions. It is not only impossible to know all the contingent effects of a decision, even for the shortest time period ahead. The very attempt to know them would lead to complete paralysis.

But the determination what should be considered and what should be ignored, is in itself a difficult and consequential decision. We need knowledge to make it—I might say that we need a theory of entrepreneurial inference.

c. The characteristics of risks. It is not only magnitude of risk that we need to be able to appraise in entrepreneurial decisions. It is above all the character of the risk. Is it, for instance, the kind of risk we can afford to take, or the kind of risk we cannot afford to take? Or is it that rare but singularly important risk, the risk we cannot afford not to take—sometimes regardless of the odds?

The best General Electric scientists, we are told, advised their management in 1945 that it would be at least forty years before nuclear-energy could be used to produce electric power commercially. Yet General Electric—rightly—decided that it had to get into the atomic energy field. It could not afford not to take the risk as long as there was the remotest possibility that atomic energy would, after all, become a feasible source of electric power.

We know from experience that the risk we cannot afford not to take, is like a "high-low" poker game. A middle hand will inevitably lose out. But we do not know why this is so. And the other, and much more common kinds of risk we do not really understand at all.

d. Finally, there is the area of measurements. I do not have to explain to readers of *Management Science* why measurements are needed in management, and especially for the organized entrepreneurial decisions we call "long-range planning".

But it should be said that in human institutions, such as a business enterprise, measurements, strictly speaking, do not and cannot exist. It is the definition of a measurement that it be impersonal and objective, that is, extraneous to the event measured. A child's growth is not dependent on the yardstick or influenced by being recorded. But any measurement in a business enterprise determines action—both on the part of the measurer and the measured—and thereby directs, limits and causes behavior and performance of the enterprise. Measurement in the enterprise is always motivation, that is, moral force, as much as it is *ratio cognoscendi.*

In addition, in long-range planning we do not deal with observable events. We deal with future events, that is with expectations. And expectations,

being incapable of being observed, are never "facts" and cannot be measured. Measurements, in long-range planning, thus present very real problems, especially conceptual ones. Yet precisely because what we measure and how we measure determines what will be considered relevant, and determines thereby not just what we see, but what we—and others—do, measurements are all-important in the planning process. Above all, unless we build expectations into the planning decision in such a way that we can very early realize whether they are actually fulfilled or not—including a fair understanding of what are significant deviations both in time and in scale —we cannot plan; and we have no feedback, no way of self-control in management.

We obviously also need for long-range planning *managerial* knowledge —the knowledge with respect to the operations of a business. We need such knowledge as that of the resources available, especially the human resources; their capacities and their limitations. We need to know how to "translate" from business needs, business results and business decisions into functional capacity and specialized effort. There is, after all, no functional decision, there is not even functional data, just as there is no functional profit, no functional loss, no functional investment, no functional risk, no functional customer, no functional product and no functional image of a company. There is only a unified company product, risk, investment and so on, hence only company performance and company results. Yet at the same time the work obviously has to be done by people each of whom has to be specialized. Hence for a decision to be possible, we must be able to integrate divergent individual knowledges and capacities into one organization potential; and for a decision to be effective, we must be able to translate it into a diversity of individual and expert, yet focused efforts.

There are also big problems of knowledge in the entrepreneurial task that I have not mentioned—the problems of growth and change, for instance, or those of the moral values of a society and their meaning to business. But these are problems that exist for many areas and disciplines other than management.

And in this paper I have confined myself intentionally to knowledge that is specific to the process of long-range planning. Even so I have barely mentioned the main areas. But I think I have said enough to substantiate three conclusions:

(*a*) Here are areas of genuine knowledge, not just areas in which we need dates. What we need above all, are basic theory and conceptual thinking.

(*b*) The knowledge we need is new knowledge. It is not to be found in the traditional disciplines of business such as accounting or economics. It is also not available, by and large, in the physical or life sciences. From the existing disciplines we can get a great deal of help, of course, especially in tools and techniques. And we need all we can get. But the knowledge we need is distinct and specific. It pertains not to the physical, the biological

or the psychological universe, though it partakes of them all. It pertains to the specific institution, the enterprise, which is a social institution existing in contemplation of human values. What is "knowledge" in respect to this institution let alone what is "scientific" must therefore always be determined by reference to the nature, function and purposes of this specific (and very peculiar) institution.

(c) It is not within the decision of the entrepreneur whether he wants to make risk-taking decisions with long futurity; he makes them by definition. All that is within his power is to decide whether he wants to make them responsibly or irresponsibly, with a rational chance of effectiveness and success, or as blind gamble against all odds. And both, because the process is essentially a rational process, and because the effectiveness of the entrepreneurial decisions depends on the understanding and voluntary efforts of others, the process will be the more responsible and the more likely to be effective, the more it is a rational, organized process based on knowledge.

IV

Long-range planning is risk-taking decision making. As such it is the responsibility of the policy-maker, whether we call him entrepreneur or manager. To do the job rationally and systematically does not change this. Long-range planning does not "substitute facts for judgment", does not "substitute science for the manager". It does not even lessen the importance and role of managerial ability, courage, experience, intuition, or even hunch—just as scientific biology and systematic medicine have not lessened the importance of these qualities in the individual physician. On the contrary, the systematic organization of the planning job and the supply of knowledge to it, should make more effective individual managerial qualities of personality and vision.

But at the same time long-range planning offers major opportunity and major challenge to Management Science and to the Management Scientist.[1] We need systematic study of the process itself and of every one of its elements. We need systematic work in a number of big areas of new knowledge—at least we need to know enough to organize our ignorance.

At the same time, long-range planning is the crucial area; it deals with the decisions which, in the last analysis, determine the character and the survival of the enterprise.

So far, it must be said, Management Science has not made much contribution to long-range planning. Sometimes one wonders whether those who call themselves "Management Scientists" are even aware of the risk-taking character of economic activity and of the resultant entrepre-

[1] I would like to say here that I do not believe that the world is divided into "managers" and "management scientists". One man may well be both. Certainly, management scientists must understand the work and job of the manager, and vice versa. But conceptually and as a kind of work, the two are distinct.

neurial job of long-range planning. Yet, in the long run, Management Science and Management Scientists may well, and justly, be judged by their ability to supply the knowledge and thinking needed to make long-range planning possible, simple, and effective.

17/*Principles of Market Planning*

This article discusses what a marketing plan is and how such a plan can best be prepared. It covers in some detail the successive stages involved in the development of an effective plan.

The development of marketing plans and programs is rapidly becoming a staff function in modern business. Market research is already well established as a staff activity. In this case staff personnel typically collects facts and draws general findings which are useful to marketing executives in devising plans or determining policies.

The next stage is that in which sales forecasts and budgets for marketing expenditures are worked out at the staff level, subject to executive approval. The final stage is that in which staff units undertake to devise marketing strategies and recommend policy limits within which these strategies should operate.

In only a few leading companies has staff participation and planning been carried to that extent. This is in marked contrast to military operations in which planning has long been recognized as a staff function. A top military command reserves to itself chiefly the function of decision which commonly takes the form of choice among alternative plans developed at the staff level. The requirements of decision are equally exacting in large enterprise, so that an increasing pressure for planning at the staff level can be anticipated.

There is reason to suspect that one factor which is holding back the development of staff planning is the lack of recognized principles of market planning. The executive can delegate market research to a staff unit because he has acquired confidence in the established techniques of research. Given these techniques, he has confidence that any two competent market analysts will come out to very much the same place as to the facts of a marketing situation.

Planning has not been reduced to scientific techniques to the same extent and perhaps can never be wholly objective. Planning is to some extent an act of the creative imagination and is necessarily colored to some degree by the personality and experience of the planner. It is not too much to hope, however, that principles of planning can be formulated which will reduce the variability in the results arising from the personal element.

This article is a first attempt to suggest a line of development for these principles of market planning. First of all, it is essential to define some of the elements with which planning deals and then to discuss the successive

SOURCE: From *Cost and Profit Outlook*, June, 1952.

stages in planning for which guiding principles are needed. As a first approach to a definition of a market plan, it might be described as an overall program governing a series of business transactions.

The transaction is the basic unit of marketing activity involving an exchange between buyer and seller. Most transactions should be classified as routine transactions because they consist of an exchange of goods and services in accordance with a repetitive pattern.

A smaller number of transactions may be described as strategic transactions. The impact of a strategic transaction extends over a longer period of time or over a broader segment of marketing activities. It may generally be regarded not as a simple exchange of goods or services but as an exchange of commitments governing the future movement of goods and services. Such commitments sometimes take the form of long-term contracts against which individual deliveries are made but often are only general understandings remaining in effect as long as the arrangement is mutually agreeable.

Sometimes it is important to distinguish between a plan and a procedure. A procedure may be defined as a prescribed method for handling routine transactions. The problem with respect to a procedure is generally limited to one of relative efficiency so that the establishment of procedures does not normally raise the policy issues which are involved in broader types of planning.

A more comprehensive definition of a plan is appropriate at this point. A market plan may be defined as a program of action which specifies marketing goals and describes the means of attaining them in terms of time, space, and effort. From the viewpoint of the planner, policy may be regarded as setting up the framework within which planning takes place. More precisely, policy may be defined as a statement of the limits within which plans and procedures must operate or of the general direction which they should follow toward the attainment of marketing goals.

The first three stages in planning should determine the general type of plan, the scale of the effort and the design of the plan as visualized in full operation. Consideration must then be given to procedures to be followed in launching the plan and the critical review of the plan in relation to conditions which may affect its success. All five of these stages will be described in the following sections.

FACTS, POLICIES, AND PLANS

The occasion for planning is usually presented by a specific marketing problem. A problem arises from uncertainty concerning the outcome of plans and procedures now in effect. Modern marketing management is inclined to meet its major problems and make its plans on the basis of analysis rather than being guided by experience and insight alone.

One way to conceive of this analysis is as a re-examination of the operating assumptions by which the executive has been guided. In day-to-day decisions he necessarily makes some assumptions about the character of his market and the effectiveness of various types of effort applied to the market.

Before undertaking to improve on existing plans and procedures, it is essential that the factual basis of these operating assumptions should be reviewed. The marketing executive may be visualized as operating on the basis of a sort of map. There are boundaries or limits marking off the class of consumers he is trying to reach or the trade channels through which he is willing to sell. There are routes over which he can move in attaining his objectives which experience or investigation has indicated are better than other routes. This map may have to be brought up to date by a validation or a revision of operating assumptions before a new plan of action can be devised.

At this stage of planning, the general type of plan should be determined. Often a list of three or four major alternatives can be set up for consideration. The selection among these alternatives can be tested against the marketing facts and the statement of marketing policies. At this stage, the planner should be able to set down a brief description of the type of program that is visualized which will serve as the nucleus for the more detailed plan which is to be developed later.

Fundamental decisions as to type of marketing plan may include the issue of starting on a regional basis or beginning national distribution immediately, selling directly to retailers or distributing through wholesalers, and bringing the product out at a high price with the possibility of reducing it later as compared with pricing it for the mass market immediately. A recent market-planning assignment involved a choice among several approaches to product promotion. The three alternatives considered were those of dramatizing the product, dramatizing the company, and dramatizing the user of the product. In this instance, the marketing facts and the sales policies of the company pointed unmistakably to the third alternative.

THE SCALE OF MARKETING ACTION

In determining the scale of a marketing operation the aim of management is the adjustment of effort to opportunity. This process of adjustment is complicated by the fact that effort is expended through a plan or program in which the various parts must in turn be proportioned to each other. Usually it is not practical to deal with the problem in terms of a simple continuous curve relating effort to opportunity.

It is possible, however, to set up limits as to scale and then attempt to determine the optimum scale of operation within these limits. The top

limit might be called "the maximum effort plan". The starting point is an assumption as to the maximum amount of resources which might be available for putting the plan into effect. A rough proportioning of these total resources can then be undertaken, allocating time and money to each of the elements of the marketing operation.

The lower limit may be established by what might be called "the minimum result plan". The starting point in this case would be a statement of a minimum goal to be achieved during the first year or some other operating period. With this target in mind an attempt should then be made to list the minimum essentials and to estimate the cost of such a minimum program. Conceivably it will turn out that the maximum effort available is not sufficient to achieve the minimum result that is considered worth-while.

It may then be necessary to abandon the project or to reconsider the marketing goals in order to make it practical to proceed. For example, a decision might be reached to go ahead in a single region or sales territory rather than undertaking national distribution from the start. Generally speaking, there will be some range for planning decisions between the point of maximum effort and the point of minimum result. With these limits as guides, it should be easier to identify an optimum scale of operation which in the judgment of the planner represents the most effective application of effort to opportunity.

Decision as to the scale of operation is a major determinant in the design of detailed operating procedures. A procedure that is efficient at one level of operation may be quite inappropriate at a larger or smaller scale. Thus, determination of the optimum scale may lead directly to decisions as to whether brokers should be employed, whether salesmen should be specialized by products or solely by territories, and what should be the initial scope and character of the advertising program. Consideration of procedures may in turn lead to a revised judgment concerning scale of operations. It may be obviously uneconomic to set up facilities for a restricted scale of operation if prospective growth will shortly render these facilities obsolete.

DESIGNING A MARKETING OPERATION

Having decided on the general type or scale of operation, the next step is to design its structure in greater detail. A first problem is to determine the proper sequence of steps by which a product will move from its producer or sponsor to the ultimate consumer. The planner may start off by listing all the steps in what appears to him to be the natural order. This listing should then be reviewed to determine whether any of the steps are unnecessary or whether the sequence might be changed.

A previous issue of the *Cost and Profit Outlook* dealt with what was called "the principle of postponement". According to this principle, any change in the form of the product should be delayed to the last possible point

in the distribution process and any change in its location should be delayed until the last possible point in time. The principle of postponement is nothing more than a convenient device for testing each step for its position in the sequence in order to arrive at the most favorable arrangement of steps.

In seeking to push a step as far ahead as possible it sometimes becomes apparent that it can be eliminated altogether. There are other steps which exhibit strong resistance to postponement and, thus, establish their right to a position at or near the beginning of the sequence. Having established the sequence of steps, the next concern is with structural balance among them. That is to say that each step should be in scale with those which precede or follow it. No step should be allowed to become a bottleneck on the one hand or on the other a bulge in which resources are wasted needlessly.

Contingencies with respect to breakdown in the process as well as provision for normal operation necessarily enter into this phase of planning. The next phase is the coordination of steps or processes which must proceed simultaneously or along parallel lines. Weaknesses in market planning are constantly showing up because of the failure to coordinate schedules. Goods are advertised to the consumer before they have been stocked in retail stores, point of display materials arrive too late for planned sales events, and inventories pile up during the course of changeover in models or merchandising methods.

THE INSTALLATION OF A MARKETING OPERATION

Too many times the planner visualizes a marketing plan in full operation but fails to work out the steps by which that point is to be reached. No planning job is complete unless it gives consideration to how the plan is to be launched or how the new operation or procedure is to be installed.

First of all is the question of timing. Whether it is opportune to launch a new plan may depend on the season, the business cycle or a variety of factors in the current competitive situation. On purely strategic grounds, too much delay may put competitors on notice and dissipate much of the impact of a plan. Launching the plan too soon may mean slighting some of the conditions that are necessary to success. The most important single condition is that of making sure of adequate cooperation from all factors who will be involved in the plan. A marketing plan cannot be carried out by the sales executive himself, but will require cooperation from a number of branch offices or other units in his own organization and from various types of distributors and dealers.

Adequate incentives for cooperation should form a part of the marketing plan itself but the sequence of steps by which cooperation will be obtained is a fundamental consideration in launching the plan. Many marketing operations are wrecked at this point by unwise concessions or commitments which are made in an attempt to gain cooperation from key factors. These

concessions limit the freedom of executive action, so that development thereafter is inevitably cramped and restricted. This hazard can be minimized by regarding the launching of the plan as a separate problem and determining in advance just how far to go in soliciting cooperation.

CRITICAL REVIEW OF A PROPOSED PLAN

The planning steps which have been described so far proceed on the basis of principles of design and internal consistency relating the plan to the goals to be achieved. The final step should be that of criticizing and reviewing the plan in terms of other conditions which may affect its success.

First of all, there are the secondary consequences of marketing operations. A plan may have a number of effects in addition to those that are intended. The proposed operation may be a very effective means of approaching a given market but may alienate other customers. It may stimulate counteraction on the part of competitors to an extent that largely nullifies its benefits. A partial plan intended to change one aspect of a marketing operation may set off a chain reaction which requires a whole series of changes.

A related and yet separate set of considerations pertain to the evaluation of market risks. A plan calling for expenditure over a period of years in the marketing of a product is subject to the hazard that the product may become obsolete during that time. A better product may be under development in the company's own laboratories or in those of competitors. It is highly desirable at the time a new product is introduced to make some judgment concerning the pressure for lower prices which will accumulate as competition enters the field. Not only the price at which the company can produce the product today, but the price at which it might be willing to sell it five years ahead, may be essential to a marketing judgment.

Finally, there is the consideration of whether a plan is appropriate to the capacities of the marketing organization for which it is prepared. It might be a good plan in the abstract but require too much in the way of adjustment to a new type of market or changed marketing methods. As a final word of caution, it should be pointed out that the stages of planning cannot be separated as sharply in practice as they have been in exposition. Thus, suitability of the plan to the capacities of the organization is a criterion which the planner should have in mind from the first and not merely in the final critical review. The virtue of explicit planning procedure is to make sure that all of these considerations are taken into account at some stage in the process. Some formalization of the planning process is required if market planning is to be widely accepted as a staff function.

18/*Making Long-Range Planning Work*

BRUCE PAYNE AND JAMES H. KENNEDY

Modern long-range planning on a systematic basis is quite different from the intuitive judgment practised by managers in the past. The authors offer some sound suggestions as to how to make long-range planning operational.

In most progressive companies, it is no longer necessary for executives to be sold on the values of long-range planning. The advances of modern technology and the effects of changing business conditions have made complacent drifting and intuitive judgment luxuries that today's managers can no longer afford. A sound, realistic plan for future action can spell the difference between corporate prosperity and failure in the years to come, and forward-looking managements are adopting the principles of long-range planning to minimize the risks that lie ahead and to insure optimum results from the development of their company operations.

WHAT IS LONG-RANGE PLANNING?

Long-range planning (LRP) is a new management technique that coordinates all the people and functions of a company in the achievement of practical goals, developed on a scientific and objective basis. It is much more than business forecasting, which involves trends and projections; long-range planning goes further, helping management to determine how to take advantage of the trends, how to minimize the effects of unfavorable trends, and how to attain reasonable and profitable objectives.

Nothing in the company can be overlooked or omitted in developing a long-range plan. Time-tables, specific plans, well-defined responsibilities, checks and balances, and intermediate as well as long-range goals must be developed for every facet of corporate operation. In most companies, this organized plan outlines a guide for management action for at least five or ten years, and it provides a detailed plan of operation for at least two years in the immediate future.

KEY STEPS IN LONG-RANGE PLANNING

The experience of the leading companies who have adopted long-range

SOURCE: From *The Management Review*, a publication of the American Management Association, vol. 47, February, 1958, pp. 4-8, 73-79. Bruce Payne: Bruce Payne & Associates, Inc. J. H. Kennedy: Bruce Payne & Associates, Inc.

planning is now beginning to crystallize into a rather definite pattern for the development of an effective plan. With judicious interpretation, these steps can be applied to the long-range planning efforts of practically any company, large or small.

1. *Define and state corporate goals*

Put the corporate goals in writing, and make sure that everyone who has any part in determining or achieving the goals understands them.

Obviously, no firm can engage in long-range planning without knowing, in some detail, the real goals of the company. But how well are goals usually understood? Yours is an unusual company if even the key executives can agree on what the corporate goals really are.

Clear, mutual understanding of corporate goals, then, is part of the preparation for LRP. The basic corporate goals should consist of much more than a simple statement such as "To make money", or "To return 5 per cent annually on investment", or "To be first in volume in our industry". Goals should take into account, practically, such factors as:

Risk ("We might triple sales and be No. 1 if we are successful, but if the plan fails we might lose our present position and seriously endanger the business. Is the potential gain worth the risk?")

Timing ("Does it really make any difference if we get there in 1965 or in 1970?")

People ("Should we restrict our goals to those that can be achieved without major executive changes? What is our attitude toward our employees, our stockholders, management, the trade, the community?")

2. *Measure achievement of corporate goals to date*

This measurement requires complete honesty. It calls for stepping back from day-to-day operations to form a completely objective assessment of all strengths and weaknesses, both within the company and outside in the market.

Because utter objectivity is extremely important, the over-all assessment is often best accomplished by a competent consulting firm. This step in LRP is, in effect, a corporate audit, and should include consideration of over-all policy and management, financial position, sales and marketing, organization and staffing, physical plant and equipment, manufacturing effectiveness, research and development, quality control, personnel administration, advertising, and public relations.

3. *Bolster weak areas; tighten management controls*

Once any corporate weaknesses that do exist have been recognized as such, it is relatively easy to take steps of improvement. Such correction should be made before a company progresses any further with LRP.

This is also the time to tighten any management controls that should prove inadequate. The long-range planning function, a nerve center of the company, naturally requires current information in many forms—sales statistics, financial position, manufacturing data, economic projections. However, since this same sort of information is needed by top management and functional officers in their day-to-day and short-term activities, strengthening the existing control system is preferable to establishing separate controls for the use of the LRP function alone.

4. *Write the plan and get it accepted*

Although modern LRP is a discipline and a way of thinking, the plan should be put on paper to insure against possible omissions and to assure mutual understanding.

Each executive who is to share in the work of accomplishment should read and understand the entire long-range plan as it pertains to his function and to the company as a whole. This is the time for ironing out the details and smoothing over any personal differences or interpretations. Once the plan is accepted, further changes should be discouraged, so it is well worth while to devote several weeks to this step.

5. *Put LRP to work*

In order to keep the plan up to date, progress should be checked regularly and revisions or alternate plans made when necessary. This is where the hardest work must be done—often without the glamor or enthusiasm associated with the LRP project when it was new and exciting.

The plan should be audited every three months in the beginning, once a year after that time. Projections and detailed plans should be re-extended into the future with each audit of the plan; e.g., the 1958-1963 plan will be extended in 1959 to cover 1964, and so forth.

MAKING LRP WORK

Successful long-range planning is not easy. The basic requirements for making LRP work are fresh thinking, real decision-making, and hard work.

Fresh Thinking. It is, of course, natural to expect executives to think primarily about their own areas of responsibility: the controller about money matters; the chief manufacturing officer about plant, equipment, materials, and personnel; the top marketing executive about sales forecasts and share of market. In many companies, most of the coordinating between these somewhat diverse interests is done personally by the president or an executive vice president.

Through a sound long-range plan, executives become more interested in the company as a whole. Because they see where the company is headed and understand the role played by each function, they can apply themselves

even more strenuously to the fulfillment of their own responsibilities. And, since LRP looks into a future in which change is synonymous with progress, the very thinking about planning helps to break down resistance to change. LRP, in effect, opens minds and keeps them open and receptive to change.

Decision-Making. Fuzzy management disappears when LRP is applied. Ownership and management, having made major decisions on corporate goals and their achievement, must follow through with many other important decisions. Real LRP eliminates the gray areas of doubtful responsibility between executives and between departments and divisions.

Hard Work. LRP, to be effective, must be a living instrument—not a *Hard Work.* LRP, to be effective, must be a living instrument—not a confidential report in a locked drawer. Like true cost reduction, it is a philosophy that needs daily application and attention, frequent review, and constant interpretation. To make LRP work, therefore, management must roll up its sleeves, throw away tradition if necessary, and pitch in. Timid managers avoid LRP because it means committing themselves and the company to a course of action which, although flexible enough to meet major changes in conditions, is rather definite. But most executives today realize that, although it takes hard work to attain the established goals, it is far more dangerous to allow the company to drift along with no definite goals to work toward.

GETTING PARTICIPATION IN LRP

Long-range planning will work if top executives have confidence and faith in it. Since it is a primary responsibility of the president or chief executive officer, it is most essential that he personally lead the planning effort. The president's enthusiasm and support will filter throughout the organization, and the people who work daily with the plan will *make* LRP work by striving to meet its time table.

Much of the real work in LRP takes place long before the first plan is written, and one of the reasons for the success of today's plans is the effort in preplanning—planning for the planning.

When a company has a plan for the future, it is bound to have an effect on the people in the company. The reasoning might go something like this: "If sales are going to double in the next five years, we'll probably need more District Managers. I'd better work to get one of those jobs." When a man can see something for himself in his company's long-range plan, it is not hard to get his cooperation.

Beginning with the preplanning stage, as many people as possible should participate in creating the long-range plan. Give a little here and there so that more people can point to a little piece of the plan and say, "That's

my idea, my contribution". Soon the association broadens, and the entire LRP effort becomes "our plan".

One proven way to achieve participation is through a Long-Range Planning Board (purposely given the designation of "Board" rather than "Committee" to distinguish LRP as a top-level matter). Membership on the LRP Board should rotate, thus giving more executives an opportunity to present their ideas and become acquainted with the long-term objectives and ambitions of other corporate functions and executives.

THE IMPORTANCE OF OBJECTIVITY

Every company has weaknesses, and it is just facing facts to recognize them. A long-range plan should build on corporate strengths, but it should be tempered in its aims or timing by any weaknesses that are recognized. Many of these weaknesses can, of course, be corrected. For example, the need for additional market research often shows up during the original "corporate audit". If the company is large enough to support a Market Research Department, the function should be organized and manned before the first Long-Range Plan is put into effect.

Other weaknesses must be tolerated for reasons beyond management control. If, for example, the Vice President for Sales holds his position because his family owns a significant share of the company, this hard fact must be considered in planning. If this executive is weak on factual analysis, give him an assistant who can handle that aspect of the job. If it's clear that, regardless of his ability or performance, the man might be the next president, face that fact and plan on it. Be objective, and the long-range plan has that much additional chance of success.

The importance of objectivity was clear to one young company in the electronics industry that had been built around a single product. As the firm expanded into a related product line, annual sales climbed to over a million dollars in a few years, largely on defense work.

A cutback in defense spending for the items manufactured by this company caused it to look seriously into the future. A decline in sales and profits triggered thinking about long-range planning.

The company entered LRP with some rather grandiose ideas about cashing in on the consumer electronics business, perhaps in the television field. But management, when forced to be completely objective, soon recognized that the company's greatest strength was in its superior engineering abilities and its production facilities for a high-quality, low-volume product.

By being so objective and putting aside personal ambitions to be "someone" to U.S. consumers, management was able to capitalize on the company's basic strength. Market research pointed out six industrial markets for the company's basic product line—industries where the products could be used in automation. Sales and promotion efforts were focused on these six specific

markets, and the company's long-range plan included provision for further commercial applications after the company was equipped financially and became experienced in the necessary sales service.

SETTING INTERIM GOALS

One reason that old-fashioned forward planning rarely worked was the haphazard way in which interim goals were set. The so-called planning of a few years ago was often the result of a blue-sky management session held on a long weekend in some secluded lodge or resort. The optimists led the way, and the goals for the next year or five years were frequently pegged more on enthusiasm than fact.

How natural, then, for lower echelons of management to put little faith in goals that were seldom or never achieved! Modern LRP, to regain the confidence of the entire company, swings the pendulum back beyond center to compensate for existing attitudes. Goals for the first year, for example, are often set quite conservatively, with goals for subsequent years set closer to actual expectations. After one goal has been achieved, people at all levels rightfully take pride in the achievement and tackle the next goal without skepticism.

Another interesting aspect of interim goals is enthusiasm and support they can engender in people. It is not unusual to hear of young managers insisting on higher interim goals—then going right ahead and achieving them.

OVERCOMING RESISTANCE TO LRP

The case of a well-known manufacturer in the musical instrument industry confirms the value of setting realistic interim goals. This company had experienced a leveling-off in sales and profits. The old-timers were not upset, but younger board members, brought in during a recent period of additional financing, thought that the time for long-range planning had come.

The younger executives (they were in their late forties compared with an average age in the sixties for the older group) favored the adoption of a lower-priced line of instruments. But the older men, who had built the successful company, felt that the company's top product was the recognized quality leader in its field, and other products in the company's line shared in this high-quality image.

A market study of the company's external strengths and weaknesses confirmed the above reasoning, but pointed out an opportunity in the lower-price, lower-quality market. There were also opportunities to increase sales through better advertising and promotion, brand management, stronger dealer service, and the addition of more competent dealers.

Ideally, the long-range plan should have recommended immediate manufacture and sales of the lower-priced line, before competition became so

strong that entry into this part of the market would be more difficult. But the very idea of selling a lower-priced product was a terrible shock to the older executives, so modified interim goals were adopted: all the recommendations were accepted, *except* those involving a low-priced product. This procedure allowed achievement of the goals without major opposition from the older men, thus gaining their confidence in the over-all plan while giving them time to get used to the idea of making and selling an instrument for the high-volume market.

BUILDING FLEXIBILITY IN THE PLAN

A frequent criticism of long-range planning is that it encourages inflexibility, and that it just "can't be applied" in certain industries where seemingly uncontrollable factors control the business cycle. But modern LRP, being a practical and objective management tool, incorporates alternative plans to be put into effect in the event of an unexpected business recession, a major war, or a significant change within an industry.

In the current profit squeeze, for example, companies with comprehensive long-range plans know where they can pare costs without impairing achievement of long-term goals. Companies without LRP that engage in the usual "paper-clip and pencil" campaigns to reduce costs often damage relationships with employees or with suppliers and customers far more than is warranted by the actual dollar savings.

One major processor of a basic raw material, which has an almost unlimited choice of markets on which to concentrate, was faced with the problem of retaining some measure of flexibility while continuing to sell on a selective basis. How could it pinpoint markets to serve selectively —not offering a complete line to every U.S. industry—while maintaining flexibility?

The answer, developed as part of this company's LRP, was a new method of determining market suitability that puts numerical values on many of the tangible and intangible factors usually studied by management when a new market or a change in emphasis is being considered—growth, sales cost, sales leverage, competition, distribution structure, etc. It has been applied in varying forms in several leading firms, but in the processor's long-range planning the analysis is done on a *continuing* basis.

This new tool, developed as a byproduct of LRP, has given this company the flexibility to spot trends that affect the profitability of its sales in all major markets—with full consideration of management objectives and company limitations.

If the preparatory work of LRP is done well, a lot of enthusiasm will be generated within the company. Management must take advantage of this initial interest to get the first plan written and in operation within six months of the start of the project. Any planning that takes longer than

six months to get started stands a very good chance of never getting off the ground.

MAINTAINING LRP MOMENTUM

Even though some of the early enthusiasm will wear off, it is important to maintain a high level of vitality in the planning effort as it continues. Here are three tested ways of keeping the company, its daily operations, and its LRP all in tune-with each other.

1. *Assign Specific Responsibilities*

The president holds primary responsibility for long-range planning and cannot assign it to another executive, an assistant, a committee, or a consultant—but he may well call on all of this assistance to perform specific tasks. He may, for example, designate one man as coordinator of planning, a focal point for all LRP information. But the president alone retains the decision-making responsibility.

The president may also ask a consultant to make use of his objectivity and experience in evaluating corporate strengths and weaknesses. But the decision on what to do about the consultant's findings and recommendations will still remain with the president.

The detailing of individual responsibilities should be quite complete. If a new plant is to be built three years from now, the specific responsibilities for site selection, construction coordination, equipment selection and installation, financing, etc. should be assigned in the long-range plan itself —by name or job title, and with a target month for planned completion of each subtask. The more job functions that can be actually named in the basic plan, the greater will be the feeling of participation and chances of accomplishment.

Note the emphasis on timing as well as people. A master time-table for at least five years ahead, outlining who does what in each month, is perhaps the most vital document in the entire plan.

2. *Make Frequent Progress Checks*

The most effective long-term measure of the value of planning is, of course, profits. Although the determination of profitability would require a comparatively long period of time, it would be unrealistic to assume that a company should wait years to determine the value of long-range planning or to assess corporate progress towards long-term objectives.

Earnings and return on investment are only one yardstick for measurement of progress. The president should be constantly informed of actual accomplishment in comparison to the master time-table, and he should develop such other measures of the progress of his company as rate of

executive and employee turnover, progress of competitors, and attitudes of executives, employees, and customers.

3. *Revise When Necessary*

A certain amount of rigidity must accompany every long-range plan because LRP commits a company to a specified course of action. There are continual pressures to abandon one segment of the plan, to change one of its basic assumptions—or even to toss the whole plan out the window. The president must stand firm against most of these suggested diversions, but he must also have the wisdom to revise the plan or adopt one of its alternative courses when necessary.

Technology in an industry may experience a great advance through the discovery of a new material or a new technique, or world conditions might cause drastic changes in living habits or economic conditions. A company's long-range plan should be revised quickly enough to take early advantage of such significant changes, but not so fast that the plan is constantly being diverted to meet short-term conditions.

THE BENEFITS OF LONG-RANGE PLANNING

Progressive companies that have applied the long-range planning philosophy have noted many benefits, some expected and some quite unexpected.

Crisis management becomes less pronounced. Most of the situations that can compound a crisis are considered in LRP, so fire-fighting management by exception tends to disappear. Greater emphasis can be put on the positive side of management by exception, analyzing outstanding good performance rather than remedying mistakes.

Short-term dips assume less significance. If the corporate eye is kept focused over the horizon—on conditions that will prevail after five or ten more years of population increase and improved standard of living—then a few months of lower sales do not appear to be so devastating. LRP does not encourage complacence, but it enables a company to view current events in perspective.

New markets are entered as soon as possible. Any firm that has been selling to Europe, for example, or firms that have been considering such international activities, will be greatly affected by the European Common Market idea. Firms that looked ahead could have seen this move as a possibility years ago and would be able to implement their plans as the application came closer. Firms without such long-range planning are obliged to start with a handicap of several years.

Money and men come easier. Financiers increasingly are insisting on knowing about a company's plan for the future. The need for money can be explained logically and clearly in terms of a company's long-range

plan. New executive talent is also attracted to a company with modern LRP. A man can better envision his own growth and security when he sees that these desirable features have been spelled out in a long-range plan.

Long-range planning is working today in many companies as a management service to anticipate corporate requirements and corporate action. It is a mark of industrial leadership by which good management is made more effective and good companies retain or attain recognition in their industry.

The case histories of successful LRP—taken from many of the country's leading corporations—are enough to convince anyone who still needs convincing that long-range planning, in its modern sense, is the most significant advance in management thinking of the current decade.

19/Decisions Involving High Risk

PAUL E. GREEN

This article questions the adequacy of traditional planning techniques for coping with the increasing complex problem of business planning. It is argued that conventional techniques suffer from two deficiencies : (1) a lack of a suitable conceptual framework ; and (2) the lack of a means of implementation. The author suggests that greater use of the Bayesian approach to decision-making under uncertainty will prove highly successful to most firms.

Concomitant with the growing complexity of business operations, the faster obsolescence of products and processes, and the increasing costs of technological development, the function of business planning is growing in stature. As the costs of wrong decisions continue to mount, as well as the costs of delaying even the right ones, it is not surprising that more attention is being devoted to the problem-search and problem-solving activity which business planning should embody.

If, however, the need for this function is becoming more apparent, might the traditional techniques of business planning be insufficient to deal adequately with the need? And if so, what other procedures might be used advantageously?

As a basis for examining these questions, let's start with the term *business planning.* This term refers to activities associated with making high-level, high-risk decisions, taking into account the relationship of the firm to its environment and involving deployment of significant amounts of the firm's resources to reach its longer term business goals.

Peter Drucker, in *Long-range Planning, Challenge to Management Science,*[1] has cogently expressed the decision aspects of business planning by first describing some things which planning is not. He says, for example :

1. "(Long-range planning) is not forecasting. . . . Any attempt to do so is foolish. Human beings can neither predict nor control the future. . . .
2. " . . . it does not deal with future decisions. It deals with the futurity of present decisions . . .
3. " . . . (it) is not an attempt to eliminate risk. It is not an attempt to minimize risk."

[1] *Management Science,* Apr. 1959, pp. 238-40.

SOURCE: From *Advanced Management—Office Executive,* vol. 1, October, 1962, pp. 18-23, 34. Paul E. Green: Market planning and marketing research activities, Textile Fibers Department, E. I. Du Pont de Nemours & Co., Inc.

(Drucker defines (long-range) planning as "risk-taking decision-making".) The business planner and decision-maker are thus properly viewed as persons dealing with present decisions (which carry future implications) or what Drucker calls the "futurity of present decisions".

Moreover, the planner must also deal with a complementary concept—namely, the immediacy of future decisions. That is, the planner must also consider how the decision-maker's ability to act in the future is affected by the present decision. Actions (including maintenance of status quo) can be taken only in the present.

Our conception of business planning is, thus, decision-and problem-oriented rather than merely a consideration of some general future setting for the firm. With this view in mind, note a few of the characteristics of traditional planning techniques for dealing with the risk decisions of business planning.

1. Conventional planning procedures tend to emphasize end-of-planning period, or snap-shot, views of payoffs rather than flows of sales and costs through time which are related to the courses of action under evaluation. In some planning studies no attempt is even made to provide a simple *accumulation* of profit experience through the period required to reach the firm's expected position in the terminal year of the planning period.

2. Associated with the preceding characteristic is that little formal use is made of discounting longer term revenues and costs to present value to reduce *different patterns* of these flows to a common denominator basis.

3. The complexity of real business problems tends to force the use of polling procedures of one sort or another where persons knowledgeable of particular facets of the firm's activity—such as experts on end use markets or competitive activity—are asked to supply data estimates for their particular sphere of expertise, sometimes subject to a set of over-all ground rules. Planning activity, at least in large corporations thus tends to involve the activities of many persons in the organization even though coordination may be restricted to a relatively small study group.

4. Estimates obtained by this polling procedure, however, are usually stated in "certainty equivalent" terms. That is, rather than being asked to state their estimates in terms of a range of responsibilities or to attach numerical probabilities to the occurrence of alternative future events, data contributors are usually asked to supply simply a single, or "most probable", estimate for those subject areas which fall within their purview.

5. The selection of alternative courses of action for evaluation tends to be narrow. Emphasis is placed on reducing some feasible set to a "representative" subset of courses of action. Emphasis is also placed on the search for dominant courses of action—such as those acts which are expected to yield at least as large a payoff as some other act under all states of nature (environmental factors affecting the decision) being considered (and yield a larger payoff under at least one of those states of nature).

6. Little or no attempt is made to consider even low-order interactions of the courses of action being evaluated.

7. The problem of formally considering the corporate multiple goal structure is usually avoided at the outset of the study—that is, in the screening process used for obtaining candidate courses of action. Some type of formal check list may be used in this screening process.

A portmanteau variable like total profits or return on investment is then usually selected as the payoff criterion to be applied to those candidate courses of action which have survived the screening test. Risk attitudes are not explicitly analyzed by means of utility functions or similar conceptual devices for dealing formally with risk.

8. Little or no attempt is made to test the sensitivity of the outcomes of the study to departures in the basic assumptions.

9. Few formal devices are used to incorporate feedback data from the field, such as market surveys or early sales results. Insofar as the use of informal means, such as salesmen's reports, is concerned, the typically unreliable aspects of early feedback data tend to be neglected in the sense that highly generalized inferences may be made on the basis of a very small sample, particularly if there exists some "spectacular event" in this sample, such as, "Company ABC definitely does not think that the new product has sales potential" !

CONTAIN SEVERAL INADEQUACIES

Apparently traditional planning techniques contain several inadequacies for coping with planning problems. For example, although uncertainty abounds in business planning problems, few attempts have been made to incorporate a probabilistic framework in planning analyses. Although the futurity aspects of present courses of action are important, relatively little use is made of the discounting function and similar capital budgeting tools.

The deficiencies of traditional techniques might be grouped conveniently under two classes (*a*) lack of a suitable conceptual framework within which the characteristics of planning problems can be viewed ; and (*b*) lack of a means to implement this conceptual framework from a computational standpoint.

It is hardly surprising that relatively little use (at least by business planners) has been made of the procedures developed under the general heading of decision theory.

First, these techniques are, for the most part, of recent origin. Moreover, many of the contributions to this subject have had rather specialized distribution, and they have been associated with areas of interest (such as the foundations of statistics) that are typically outside the purview of business planning personnel.

A notable exception, however, is the recent book by Robert Schlaifer, *Probability and Statistics for Business Decisions.*[2] This particular work offers one of the most provocative and complete procedures for dealing with decisions under uncertainty, namely the Bayesian approach[3] available to the business planner.

The Bayesian approach to decision-making under uncertainty provides a framework for explicitly working with the economic costs of alternative courses of action, the prior knowledge or judgments of the planner, and formal modification of these judgments as additional data are introduced into the problem.

DESCRIBING IT IN TERMS OF QUESTIONS

While the full richness of this set of techniques cannot be explored here, at least the principal aspects of Bayesian decision theory might be described in terms of a series of questions with which this approach is designed to cope. These questions are:

1. Given specific alternative courses of action (such as different plant sizes or introductory price levels) whose effectiveness is dependent upon the occurrence of alternative "states of nature" (such as consumer demand or competitive retaliation), how should a decision-maker choose the "best" course of action, if he is not certain as to which state of nature will in fact prevail?

2. Given the opportunity to conduct, at a cost, some type of data-gathering activity (such as a consumer survey), should the decision-maker "purchase" more data bearing on the chances that alternative states of nature will occur and then take terminal action, or should he choose some "best" act now and forego the collection of additional data? Moreover, how should the data collection be designed?

3. Given the additional data (frequently subject to both sampling error and systematic error or bias), how can the decision-maker use the additional data to modify his initially held judgments about the occurrence of the alternative states of nature deemed relevant to the problem and then take optimal action?

FEATURES OF THE BAYESIAN APPROACH

An oversimplified planning example may illustrate some of the features of the Bayesian approach.

Assume a decision-maker is faced with the problem of choosing an appropriate plant addition for the commercialization of a modified textile yarn

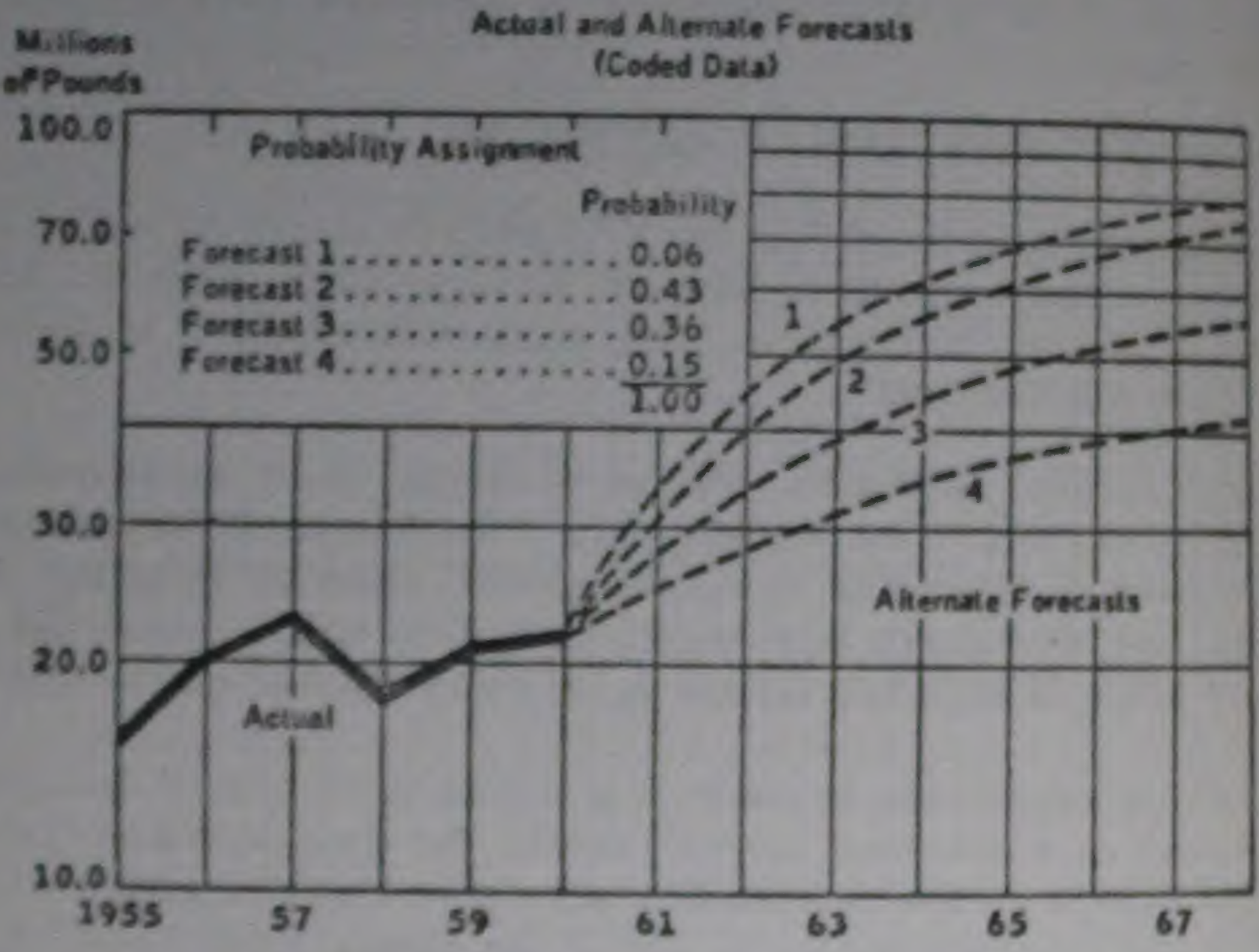
[2] McGraw-Hill Book Co., 1959.

[3] The so-called Bayesian approach owes its name to a central feature of the procedure, Bayes' theorem, named after its developer, Thomas Bayes.

product (called, say, Texcel) under an uncertain future demand for the modification.

Building a plant too large, relative to demand, would result in costs associated with idle capacity. Building a plant too small, relative to demand, would result in costs associated with both profits foregone and the opportunity for competitors to increase their share of the market at the firm's expense.

Figure I. Texcel Fiber Forecasts



If we assume the decision-maker is considering four alternative plant sizes—A, B, C, and D—ranging from large to small, then if the demand were high, payoffs would tend to favor the A plant addition, while if the demand were low, payoffs would tend to favor the D plant addition.

Assume that the firm's marketing personnel have attempted to forecast alternative levels of potential sales for the product (states of nature in Bayesian parlance) and they believe that some levels are more likely to occur than others. These alternative levels appear in Figure I. Subjective probabilities of occurrence have been assigned to each forecast, 1 through 4.

The planner must then consider the payoffs over the whole planning period which would be associated with the combination of each plant size and sales forecast. These calculations would typically take into account the flows of revenues and costs after certain assumptions have been made on competitive behavior, pricing, and similar considerations.

In this example, assume that the payoff (say, in discounted cash flow) associated with the conjunction of each alternative course of action and each alternative state of nature (potential sales) has been summarized as shown

Figure 2 Texcel Problem

Table 1 Payoff Matrix—Unweighted (Entries-MM $)

Capacity addition strategy	*Sales forecast* 1	2	3	4
A	30.8	21.7	(—) 2.2	(—) 29.3
B	28.3	23.6	8.3	(—) 17.8
C	14.8	14.2	10.9	(—) 9.8
D	7.3	6.5	5.1	(—) 7.2

Table 2 Originally Weighted Payoff Matrix (Entries-MM $)

Capacity addition strategy	*Sales forecast* 1 (P = .06)	2 (P = .43)	3 (P = .36)	4 (P = .15)	*EMV*
A	1.85	9.33	(—) 0.79	(—) 4.40	5.99
B	1.70	10.15	2.99	(—) 2.67	12.17
C	.89	6.11	3.92	(—) 1.47	9.45
D	.44	2.80	1.82	(—) 1.08	4.00

Table 3 Equally Likely Weighted Payoff Matrix

Capacity addition strategy	*Sales forecast* 1 (P = .25)	2 (P = .25)	3 (P = .25)	4 (P = .25)	*EMV*
A	7.70	5.43	(—) 0.55	(—) 7.33	5.25
B	7.08	5.90	2.08	(—) 4.45	10.61
C	3.70	3.55	2.73	(—) 2.45	7.53
D	1.83	1.63	1.28	(—) 1.80	2.94

in Figure 2, Table 1. If the high sales forecast (Forecast 1 in the chart) were to occur, then strategy A (large plant) would provide the highest payoff.

APPLYING SUBJECTIVE PROBABILITIES

Under forecast 2, strategy B would provide the highest payoff, and so on. However, by applying the subjective probabilities associated with the occurrence of each forecast, as noted in Figure 2, Table 2, strategy B provides the highest expected monetary value, EMV, and would then be selected under the Bayesian approach.

Moreover, to test the sensitivity of the best choice to changes in the forecast probabilities, it is noted in Figure 2, Table 3, that assignment of an equiprobable measure (0.25 probability to each forecast) would not change the decision to select the strategy listed as B.

In this example, many other features of the Bayesian approach have been omitted.[4] Still, the illustration, though brief, does demonstrate the planner's need to consider alternative environments and their associated probabilities of occurrence, flows of revenues and costs, and the use of sensitivity analyses to indicate how the profitability of the "best" strategy might behave with changes in the assumptions underlying the analysis.

However, as can readily be imagined, the calculational burden associated in dealing with the complexities of actual problems goes considerably beyond what is illustrated here.

IMPLEMENTING BAYESIAN APPROACH

It is hardly surprising that the use of an electronic computer can assist materially in implementing the Bayesian approach as well as in other areas of business planning activity. For instance:

1. The computer can be used in screening possible courses of action. In diversification planning, for example, the usual procedure is to set up a list of criteria, against which candidate products and/or companies are matched. In large-scale programs of this sort, the computer can provide a ready means to perform this screening function.

2. The computer can be used to explore relevant states of nature via various types of forecasting models. Not only may the usual techniques of regression analysis and related statistical procedures be employed, but also forecasting models incorporating various dynamic features can be devised and tested retrospectively on the computer.

3. After various courses of action or states of nature are screened, the computer also provides an effective way to implement the Bayesian model. For example:

a. The computer provides the capacity for expeditiously evaluating a greater number of courses of action, if relevant to the problem.

b. The computer may be used to establish the initial payoff functions—a not easy calculational task if the planning period is long.

c. The computer provides a means to perform the desired sensitivity calculations after initial outcomes have been determined.

d. The computer can be used to provide flexible model in which field data can be entered for the calculation of *revised* probabilities via the Bayesian approach. In other words, this model (for example, the computer

[4] For instance, "indifference probabilities" could have been computed. These are probabilities which would have to be associated with the occurrence of some state of nature more favorable to an inferior strategy before that strategy would break even with strategy B. Also, calculation of the costs of uncertainty ($2.63 million in this case) could have been illustrated to show the stake involved in a decision to collect more information before taking terminal action. Moreover, the modification of initial probabilities by using additional data has been omitted as well.

program) can be established and maintained on a reasonably current basis, for incorporating new estimates as needed and then determining the implications steeming from these revisions.

It would thus seem that the computer can provide a useful (and frequently necessary) device to develop the payoffs associated with the complex course of action-state of nature combinations found in actual planning problems.[5] In the two years during which this approach has been used experimentally at Du Pont, computer assistance has been decidedly useful.

In summary, the decision theory-computer approach offers provocative possibilities for dealing with the uncertainty aspects and ill-structured nature of business planning problems. Continued development of this approach might well provide the business planner with a set of techniques powerful enough to be commensurate with the complexity and importance of his functional area.

[5] As an illustration dealing with the complex characteristics of industrial market planning, the writer's : "An Application of Bayesian Decision Theory to a Problem in Long-Range Pricing Strategy," Annual Meeting of American Statistical Assn. (New York, December, 1961), might be of interest.

20/ *Decision Theory and Marketing Management*

ROBERT D. BUZZELL AND CHARLES C. SLATER

The authors of this article present, in detail, a case study which shows how a firm solved a basic problem of considerable magnitude through the use of some of the latest decision theory techniques.

The term "decision theory" refers to a body of methods by which complex problems of decision under uncertainty can, in effect, be reduced to a limited number of simpler problems for purposes of analysis. A more specific term for the method recommended here is *individual decision-making under risk.*[1] By this is meant a formal analysis of decision alternatives and their consequences when the effects of the decision are not known with certainty.

DECISION THEORY APPROACH

The basic elements of decision making under risk may be summarized briefly.[2] A decision maker (person or firm) must choose among several "acts" or "strategies" which we denote as A_1, $A_2 \ldots$ A_n. Each act is a well-defined series of actions or procedures; thus, "Act 1" may mean, "Build a new retail outlet at X location with 20,000 square feet of floor space". "Act 2" may represent the reverse, "Build no new retail outlet". Insofar as possible, the sets of acts employed in the analysis should include *all* reasonable possibilities in a given situation. Experience, judgment, and creativity are required to identify the decision possibilities in a marketing problem.

Choice among the various possible acts is difficult because the consequences of an act depend on certain *conditions* which cannot be predicted with certainty. These conditions may be termed "states of nature" and designated E_1, $S_2 \ldots S_m$. The "state of nature" concept includes all factors which determine the effects of a marketing decision (for example,

[1] Compare Duncan Luce and Howard Raiffa, *Games and Decisions* (New York: John Wiley and Sons, Inc., 1957), pp. 12-15.

[2] See Robert Schlaifer, *Probability and Statistics for Business Decisions* (New York: McGraw-Hill Book Co., Inc., 1959); and Luce and Raiffa, same reference as footnote 1.

SOURCE: From *Journal of Marketing,* national quarterly publication of the American Marketing Association, vol. 26, July, 1962, pp. 7-16. Robert D. Buzzell: Assistant Professor, Graduate School of Business Administration, Harvard University, Charles C. Slater: Head of Consumer Marketing Services, Arthur D. Little, Inc., Cambridge, Mass.

the responses of customers, general business conditions, and competitors' reactions). For example, "State 1" may represent "population in the trading area increases 10 per cent in the next five years, and competitors build three new stores." As in the case of decision possibilities, *all* relevant states of nature should be included in the analysis of a decision, so far as possible. In a literal sense, of course, this can never be attained, so that "complete" optimization is not feasible.

The states affecting the outcome of a decision may *be related to* the particular decision chosen. For example, a decision to use a specific advertising strategy might lead to a defensive response by competitors which could not occur if a different strategy were selected. Consequently, the relevant "states of nature" must be identified for *each* possible act A, although, of course, the same states of nature *may* apply to several or all acts.

Assuming that a given act is selected and that a given state of nature prevails, it is possible to determine the "payoff" to the decision maker. By "payoff" is meant the monetary and other consequences of the decision. A difficult problem is presented when nonmonetary "payoffs" must be incorporated. In relatively simple problems, it may be possible to assign "cash equivalents" to these consequences. More generally, modern utility theory provides a mechanism for assigning numerical measures to the results of a decision, including monetary and other effects. These payoffs should be estimated on a *net* basis; that is, the costs of carrying out the decision (if any) should be deducted from its estimated revenue.

Determining the payoff of an act under a given state is not an easy task, since a decision of any real importance has far-reaching indirect consequences, in addition to its immediate impact on profits. For example, a decision to market a new product has effects on the long-term sales patterns of existing products, in addition to its own success or failure. Estimation of payoffs is further complicated by the fact that, if they are to be realistic, payoff measures must reflect the particular values of the decision maker, and these vary among persons. While the treatment of payoffs in this example is straight-forward, it does not imply that the problem is this simple in practice.

Because the outcome of a decision is shrouded in uncertainty, a key element in the analysis of a decision is to assign *probabilities* to the various possible "states of nature". In some cases, especially those involving *repetitive* decisions such as routine buying and inventory control, it is relatively simple to determine the probabilities of occurrence for various "states" through analysis of quantitative evidence. For example, sales data may reveal that demand for an item is between 10 and 19 units per week 20% of the time, between 20 and 29 units 15% of the time, and so on. These *relative frequencies* may then be used directly as probabilities of occurrence for the various states of demand (assuming, of course, that no basic changes take place in the market, seasonal variations have been accounted for, and so forth).

In most cases involving basic marketing policy problems, however, determination of probabilities for the relevant "states" is not so easy. In most cases, major policy decisions are not repetitive problems, and past experience may provide only a rough and rather ambiguous guide. *Nevertheless, even very crude approximations of probabilities for the various states affecting a decision still are better than none at all.*

The probabilities assigned to the various states represent the decision maker's "betting odds" as to the probable responses of customers, competitors, and so forth. Admittedly, it is very difficult to assign odds or probabilities to such events. But even in the most informal kind of decision making, this is precisely what managers *must do.* Any risky decision implies some assessment as to what will ensue from the decision. The real difference between "decision theory" and present management practice is the formalization of this "intuitive" process of choosing among various possibilities. While this may not improve the judgment of the individual decision maker, it improves his communication with others and facilitates the collection and analysis of further information. More important, it forces an executive to examine his problem in concrete terms, and thus serves as a stimulus to more systematic thinking on his part.

Given the various possibilities, the relevant states of nature and estimates of their probabilities of occurrence, and the payoffs for each act given each state, some act must be selected as the "best" of those available. Several different criteria have been proposed for selection of the "best" or "optimal" act, depending in part on whether or not probabilities are assigned to the states. The one adopted in this analysis is that of selecting the act with the *highest expected payoff.* The expected payoff of an act is defined as the average of its (net) payoffs under all possible states of nature, each weighted by its probability of occurrence.

To illustrate the concept of expected payoff, consider the following simple problem.

	Decision Possibilities		
States of nature	A_1: *build a new store*	A_2: *do not build*	*Probability of state*
s_1 : new subdivision is built	$ 1,000,000	0	0.3
s_2 : new subdivision is not built	—500,000	0	0.7

Here the payoffs, as previously explained, represent dollar profits to the decision maker, with future profits discounted to present values. The probabilities are based on management's assessments of such factors as population growth, real estate markets, and zoning. The expected payoff of A_2 is obviously zero, since this decision has no payoff regardless of what happens. The expected payoff of A_1 may be computed as follows:

$$\$1{,}000{,}000\ (0.3) - \$500{,}000\ (0.7) = \$300{,}000 - 350{,}000 = -\$50{,}000$$

Under this criterion, then, A_2 should be chosen, and the new store should not be built. This is equivalent to saying that the chances of success are not good enough to justify the risk.

The logic of selecting the act with the maximum expected payoff is clear-cut in the case of repetitive decisions. Since the decision is repeated over and over, we expect (by definition) the average return per decision to be the expected payoff as computed above. Hence, we should select the act that produces the highest average payoff per decision and the highest total payoff in the long run.

On the other hand, when a decision is to be made only once, the rationale of the expected payoff criterion is not so obvious. This criterion leads to the optimal decision in the sense of yielding a decision consistent with the decision maker's preferences, as summarized in the payoff table.[3]

DISTRIBUTION PROBLEMS OF THE BAKING INDUSTRY

Wholesale bakers, in common with many other types of firms, face difficult marketing problems as a result of changes in the character of their markets. These problems arise from substantial excess capacity on the one hand, and concentration of buying power among corporate chains, voluntaries, and cooperatives, on the other hand.

Development of Marketing Policies

The present-day marketing policies of wholesale bakers can best be understood in the context of the historical factors underlying their development and modification.

The commercial baking industry emerged during the latter half of the 19th century. During this period, as commercial bakers expanded their distribution beyond the immediate neighborhood of their plants, they developed a set of marketing policies geared to the needs of the small independent grocers. Among the more important of these were:[4]

1. Frequent deliveries were made to individual stores.
2. Bakers assumed responsibility for returned stale goods.
3. Retailers customarily stocked several brands.
4. Bakers provided display equipment, stocked displays, and deliberately overstocked shelves in order to increase brand exposure.

[3] Luce and Raiffa, same reference as footnote 1, pp. 20-23; also Schlaifer, same reference as footnote 2, Chapter 2.

[4] William G. Panschar, "Baking in America", vol. 1, *Economic Development.* (Evanston, Illinois: Northwestern University Press, 1956), pp. 71-84, 93-99.

5. Price competition was abandoned in view of the oligopolistic character of each retail market. In addition, "flat pricing" became customary; that is, each customer was charged the same unit price regardless of quantities purchased or terms of sale.

These marketing policies, developed for the most part in the early 20th century, largely comprise the "rules of the game" in the baking industry today. While each policy can be explained as a rational response to market conditions prevailing at the time, many of them have become less and less appropriate as market conditions changed. The impact of these changes has been made all the more severe because of the inhibiting constraints of labor unions and competitive retaliation in response to change.

Responses to Changing Market Conditions

Wholesale bakers in a given market tend to charge identical or nearly identical prices for white bread and other staple bakery products. The explanation lies primarily in the oligopolistic interdependence of the sellers, although illegal price-fixing agreements have been discovered or alleged in some cases.[5] Unit costs are sensitive to changes in output, since fixed production and distribution costs represent a substantial proportion of the total cost for modern bakery plants. Declines in sales in some markets have had the effect of reducing profits substantially. The response of the larger and more efficient competitors has been, in many cases, to *raise* prices and thus hold an "umbrella" over their weaker competitors. Obviously this policy has tended to aggravate the problem of shrinking demand by increasing the cost gap between chain bakeries and purchased baked goods.

An even more important aspect of pricing is the policy of "flat pricing". Typically, no quantity discounts are offered, nor are lower prices available for customers who are willing to forego the traditional store delivery and display services. But chains and other large buyers feel they are entitled to such discounts, and have exerted considerable pressure for them. The evidence is clear that substantial *potential* cost savings are associated with large purchases.

A systems engineering study showed that drivers' product handling rates (units handled per minute of driver time) are directly related to the number of units delivered per route stop.[6] The handling rate was more than 50% greater for stops at which 200 units are delivered than for stops at which 100 units are delivered. *Realized* cost savings are not this great, since drivers are paid on a commission basis so that improvements in driver efficiency are not reflected in lower unit wage costs. Even under the com-

[5] For example. *Continental Baking Company v. United States,* U.S. Court of Appeals for the Sixth Circuit, No. 13865 (decided July 18, 1960); *Bakers of Washington, Inc., et al.,* FTC Complaint, Docket 8309 (issued March 7, 1961).

[6] *Distribution: The Challenge of the Sixties,* a report prepared for the American Bakers' Association (Cambridge, Massachusetts: Arthur D. Little, Inc., March, 1961).

mission system, however, substantial savings in unit distribution costs are associated with larger drop sizes. (The systems engineering study also revealed that limited-service methods of distribution permit significant reduction in costs.)

Despite evidence that lower costs are associated with quantity sales and limited-service distribution methods, most wholesale bakers have resisted demands for differential pricing. This resistance is based in part on the commission system of compensation typically part of the companies' union agreements. Another factor underlying the resistance to change is the fear that doing so would alienate the small outlets which require full service and which (it is believed) would resent any preferential treatment for their larger competitors, even if justified. Also, it is feared that initiation of quantity or service discounts might lead to chaotic price competition unrelated to any economic justification.

Wholesale bakers have also resisted making private brands for chains or voluntaries because of fear of being boycotted by independents. As a compromise measure, many bakers have developed "secondary" brands of bread which are sold at lower prices than the regular brands, although little difference exists in product characteristics. The price differential is not, however, great enough to equal chain-baked brands, and the main result has been a reduction in average profit for the bakers.

In summary, wholesale bakers have responded to the twin challenges of large-scale retailing and declining per capita bread consumption by attempting to maintain the *status quo*. As output has declined, prices have been raised to maintain the profitability of marginal operators. A uniform local system of pricing and customer services has largely been preserved, despite persistent pressures to deviate from it. Territorial expansion has taken place with the result of higher unit distribution costs. Apart from the general inertia of any established marketing system, several specific factors have tended to impede a more flexible response.

The commission system of driver compensation has discouraged quantity and service discounts. Fear of retaliation by small retail customers has prevented bakers from dealing more realistically with chains. Because of the existence of excess capacity, bakers have feared and sought to avoid the chaotic price competition which might ensue if the traditional ground rules were discarded.

The method of analysis which this article recommends is that of statistical decision theory. The application of this method to a specific bakery marketing policy problem is outlined in the following section.

DECISION THEORY ANALYSIS APPLIED

For purposes of this exposition, a "model bakery market" has been developed, consisting of three competing wholesale bakers, several retail

food chains and voluntary groups, and a number of independent food retailers. For obvious reasons, the other possible acts, appropriate states of nature, and the payoffs must be identified or estimated for a specific firm. Different firms, even in the same local market, might conceive of different acts and states, and almost certainly would have different payoffs for a given decision and state.

In the context of this model market, the analysis is directed to the resolution of a specific decision problem, that of responding to a customer's request for provision of a private brand. Although this analysis is incomplete in the sense that we have not traced the *full* implications of each possible decision, suggestions for a continuation of the analysis are made in a subsequent section.

The Model Bakery Market

The hypothetical bakery market was designed to reflect typical market and operating conditions in many metropolitan areas in the United States. In this market there are three wholesale bakers, designated as A, B, and C; and two chain bakeries, those of the Blue Chain and the Red Chain. Wholesale Baker Z, located in a nearby city, is a potential "outside" competitor. The customers served by these bakeries are designated as follows:

Blue, Red, and Green corporate chains
Retailer cooperatives I and II
Voluntary chain I
Independent supermarkets
Small independent stores
Sales outside the market to various customers

The white-pan bread sales of each bakery to each customer are shown in Table 1. Bakery A has the dominant market position, with sales of approximately 400,000 units per week; competitors B and C sell approximately 250,000 units and 100,000 units, respectively. The two chain bakeries produce 250,000 units per week. Thus, the total bread market amounts to about 1,000,000 units per week.

It is assumed that the total market is fixed in the short run and that demand is sufficiently inelastic so that it will not be quickly affected by baker's marketing decisions. Selling or transfer prices per unit for each bakery are also given in Table 1. It is assumed that each bakery follows the typical industry policy of "flat pricing", with no systematic price differentials for quantities purchased or services required. An average difference of one cent per loaf in *realized* price exists in favor of large customers, primarily on account of their greater utilization of advertising and other allowances.

The cost structure of Bakeries A, B, and C is shown in Table 2. Operating

Table 1 Weekly Sales by Class of Customer, Selling or Transfer Prices Per Unit, and Dollar Sales Volume for Competing Bakeries in "Everytown, U.S.A." Market

	White Bread Sales in Thousands of Units by Customer and Price per Unit Sales to												
Bakery	*Yellow chain*	*Blue chain*	*Red chain*	*Green chain*	*Coop. I*	*Coop. II*	*Vol. I*	*Small chains*	*Indep. supers*	*Small indeps.*	*Outside market*	*Total*	*Dollar volume*
A	22@.19	50@.19	10@.19	7@.19	114@.19	76@.19	60@.19	22@.20	11@.20	22@.20	—	394	75,410
B	15@.19	36@.19	8@.19	3@.19	72@.19	48@.19	39@.19	15@.20	8@.20	15@.20	—	95	17,920
C	3@.19	14@.19			24@.19	16@.19	11@.19	3@.20	1@.20	3@.20	20@.18	95	17,920
Red chain			162@.155									162	25,110
Green chain				90@.165								90	14,850
Z												—	—
Total	40	100	180	100	210	140	110	40	20	40	20	1,000	183,205

costs are classified as fixed costs (administration, production, and distribution), and variable costs (production and distribution). The relationship of costs to sales volume is a simple linear one:

$$\text{Total Cost} = \text{Fixed Cost} + \text{Variable Cost per Unit (Output in Units)}$$

This equation for bakery operating costs provides a reasonably good approximation to their actual cost structure.

The assumed fixed and variable costs have been used in Table 2 to compute net profits for each of the three competing wholesale bakers under the "initial market conditions" of Table 1. For example, Baker A has sales of 394,000 units per week. This level of sales results in total weekly variable costs of $54,474, plus fixed costs of $12,662 per week, or a total cost of $67,136.

Hence, net profit before taxes amounts to sales of $75,410 minus operating and fixed costs of $67,136 = $8,274. Profits of Bakeries B and C have been computed in similar fashion in Table 2. While Tables 1 and 2 present simplified picture of revenues and cost, they are accurate enough for the illustration.

Analysis of a Decision

In the context of the "model bakery market" described in Tables 1 and 2, the application of decision theory to a policy problem may now be illustrated. In this analysis the viewpoint of Baker B, the second largest wholesale baker in the market, is taken.

Let us assume that the Blue Chain asks Baker B to produce a private brand of bread for sale in the Blue Stores. The problem is, how should

Table 2 Weekly Costs, Sales, and Profits of Competing Wholesale Bakeries in "Everytown, U.S.A." Market

Sales, cost, or profit	*Baker A*	*Baker B*	*Baker C*
Fixed cost—baking	$ 4,310	$ 3,732	$ 1,384
Fixed cost—routes	1,741	1,429	559
Fixed cost—marketing	2,277	1,743	538
Fixed cost—administration	4,334	2,261	862
Total fixed costs	$12,662	$ 9,165	$ 3,343
Variable cost—baking	$.09641/unit	$.10545/unit	$.11053/unit
Variable cost—routes	.03072/unit	.02928/unit	.03007/unit
Variable cost—marketing	.01113/unit	.01115/unit	.01122/unit
Total variable cost	$.13826/unit	$.14588/unit	$.15182/unit
Initial market conditions :			
Sales	$75,410	$49,590	$17,920
Total cost	67,136	46,955	17,767
Net profit	$ 8,274	$ 2,635	$ 153

Baker B respond to such a request? The decision theory approach may be summarized in six "steps" as follows:

1. *Identification of Different Possibilities.* Baker B has at least five different basic courses of action open to him, in response to the Blue Chain's request:

A_1 Ignore the request; that is, refuse it outright, or delay any response so long as it amounts to a refusal.

A_2 Make a counter-offer to produce a "secondary brand" bread to be sold at a lower price than the regular "B Brand" Bread.

A_3 Reduce price on the regular brand.

A_4 Accede to the request of the Blue Chain.

A_5 Institute a system of price differentials based on quantity and service rendered by Baker B. Such price differentials would necessarily (under the law) be offered to all buyers in the market; but in view of the Blue Chain's size and personnel capabilities, this would presumably result in somewhat lower prices to Blue than to most others.

Identification of these possibilities implies a considerable knowledge of the nature of the wholesale bread market and the motivations of the customers therein. It is assumed that the Blue Chain wants a private brand so as to improve its competitive position relative to the Red Chain, which has its own bakery plant. If this is true, the real question is, what possibilities are available to Baker B that might enable the Blue Chain to attain this goal? Possibilities A_2, A_3, and A_5 have little to do with private brands, but all are designed to help the Blue Chain achieve its presumed objective. Perhaps still other possibilities could be identified.

2. *Enumeration of States of Nature.* For each possibility it is necessary to identify the possible "outcomes" or states of nature governing the effect of the decision. In this problem, the states must take account of the responses of Baker B's customers and competitors to any action he takes.

If Baker B follows possibility A_1 and ignores the Blue Chain's request, there are six possible outcomes:

S_{11} Blue is supplied by outside Baker Z. Having achieved a foothold in the market, Z also supplies private label bread to the Yellow Chain and to Coop I.

S_{12} Blue is supplied by Z, but Z fails to get any other business.

S_{13} Blue is supplied by local Bakery A or Bakery C.

S_{14} Blue acquires its own bakery plant and decreases its purchases from B.

S_{15} Blue decides to wait; but resentful of B's refusal, adopts minor counter-measures, including reduced display space and less careful maintenance of B's display stocks.

S_{16} Blue decides to wait and does *not* adopt any counter-measures.

In similar fashion, the possible outcomes of each of B's decision possibilities have been enumerated. Some of these outcomes are common to some or all of the decision possibilities; but in general the relevant "states" or outcomes depend on the particular decision made by B. The whole range of

decisions and outcomes is summarized in Table 3.

As was suggested in the general discussion of decision theory, the number and nature of the outcomes differ for the various decision possibilities, since these outcomes consist in part of *responses* to a particular decision. This also implies that the *probabilities* of the various outcomes differ from one possibility to another, even if the possible outcomes themselves are the same.

3. *Exploration of Further Possibilities and Outcomes.* The analysis of the decision process usually cannot stop realistically with a single "round" of actions and their outcomes. In order to appraise the consequences of each decision possibility, it is necessary to explore the whole chain of effects and reactions that would ensue from a given action by Baker B.

Table 3 Decision Alternatives and Possible Outcomes

A_1 ignore request	A_2 offer secondary loaf	A_3 reduce price	A_4 accede to request	A_5 price diff. system
S_{11} Z supplies Blue, Yellow and Coop. I.	S_{21} (same as S_{11})	$S_{31} = S_{11}$	—	$S_{51} = S_{11}$ (Blue rejects counter-offer)
S_{12} Z supplies Blue only	S_{22} (same as S_{12})	$S_{32} = S_{12}$	—	$S_{52} = S_{12}$
S_{13} A or C supplies Blue	S_{23} (same as S_{13})	$S_{33} = S_{13}$	—	$S_{53} = S_{13}$
S_{14} Blue acquires own Bakery	S_{24} (same as S_{14})	$S_{34} = S_{14}$	—	—
S_{15} Blue waits, harrasses B	S_{25} (same as S_{15})	—	—	—
S_{16} Blue waits	S_{26} (same as S_{16})	—	—	—
—	S_{27} Blue accepts offer ; A and C follow suit	—	—	—
—	—	S_{38} Blue accepts offer ; A and C do *not* follow suit	—	—
—	—	S_{39} Blue accepts; A and C follow ; B retains slight advantage	—	—
—	—	$S_{33, 10}$ Blue accepts ; A and C follow ; market returns to original division	—	—
—	—	—	$S_{4, 11}$ Blue accepts; A and C offer secondary loaf	—
—	—	—	$S_{4, 12}$ Blue accepts ; A and C lower prices ; B is forced to meet	—
—	—	—	$S_{4, 13}$ Blue accepts ; A and C offer private labels to Yellow and Coop. 1.	—
—	—	—	—	$S_{5, 14}$ Blue accepts; A and C follow suit
—	—	—	—	$S_{5, 15}$ Blue accepts ; A and C lower prices

For example, suppose B refuses (A_1) and Z supplies the Blue Chain as well as the Yellow Chain and Coop I (S_{11}). Then B is confronted by a new set of possibilities: he can retaliate by supplying retailers in Z's own market, hoping to drive Z out of the local market; or he can meet Z's competition locally. If he retaliates in Z's market, the outcome will again depend on the "state of nature." The possible outcome, for instance, is that legal action will be taken against B for geographic price discrimination.

This process can be conceived as a "game" in which the decision maker takes "turns" with a fictitious opponent ("Nature") representing the whole complex of personal and impersonal market forces bearing on his decisions. An illustrative series of moves is depicted in a tree diagram in Figure 1. In this example we have traced out two "rounds" of the game: first, B makes a move by choosing A_1; then Nature "chooses" (in a statistical sense) one of the states or outcomes; then B moves again by choosing an action from a new set of possibilities; and, finally, Nature moves again.

The game could, of course, be traced out beyond the second round through a third, a fourth, and so on; but if the analysis is ever to be completed and used, it must be cut off somewhere. Also, it is clear that as the analysis is carried further, the estimates of payoffs and probabilities become more and more speculative, so that the value of analyzing further rounds probably diminishes rapidly.

4. *Estimation of Payoffs.* The payoffs for each decision and each applicable outcome have been estimated by tracing through the effects on Baker B's sales, costs, and profits.

These payoffs are shown for the illustrative moves and countermoves in Figure 1. Consider, for example, the branch of the tree corresponding to the series $A_1, S_{11}, A'_{111}, S'_{1111}$. This represents a decision by B to refuse Blue's request; an invasion of B's market by Z; retaliation by B in Z's market; and legal action against B as a result of the retaliation. It is assumed that this chain of events results in Z attaining a fairly permanent niche in B's market.

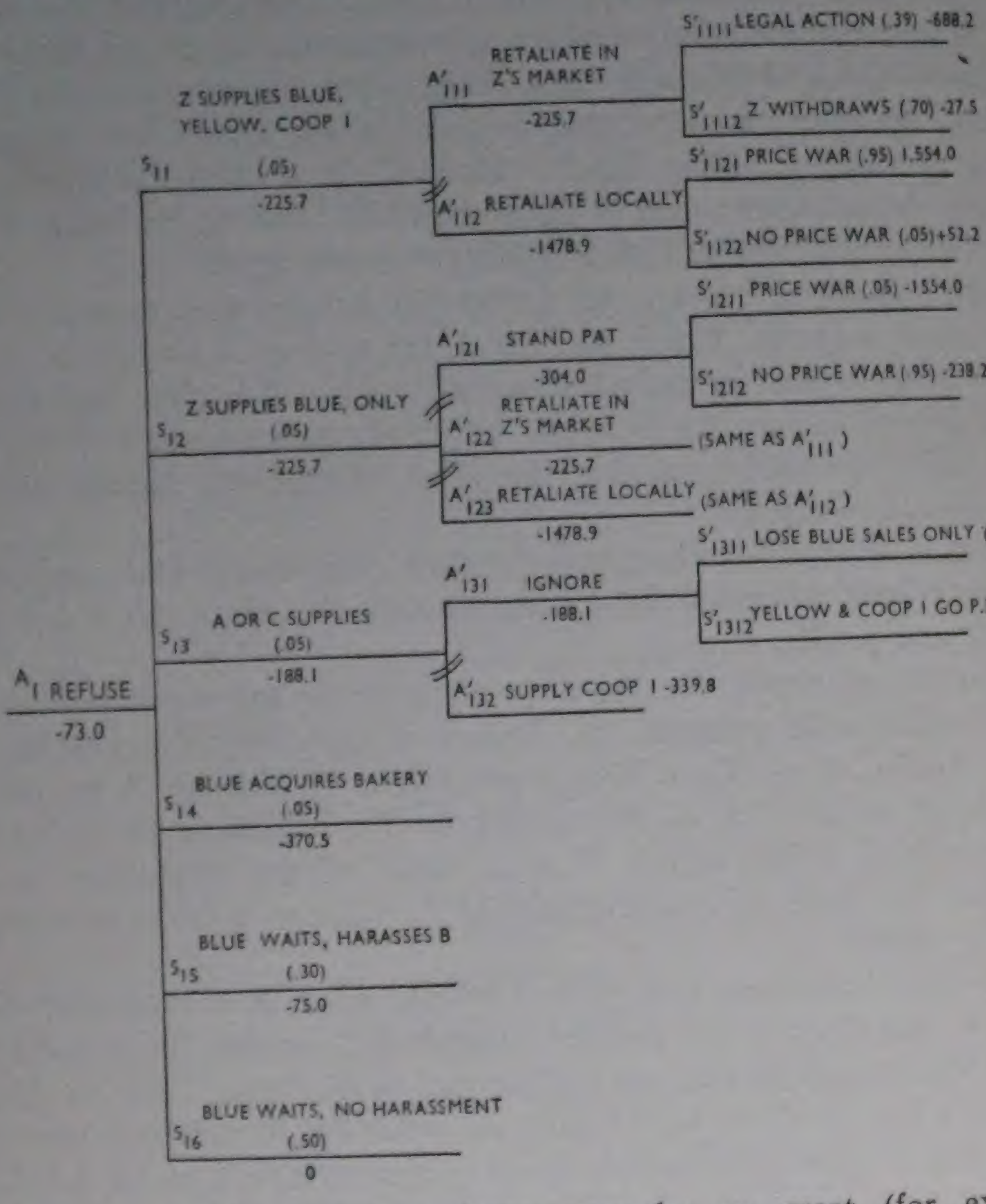
Based on past experience with private brand sales, it is estimated that Blue, Yellow, and Coop I will shift to at least 40% private brand volume, and that B will lose about this same percentage of his former sales to them. This implies a loss of about 52,000 units per week for B; and each unit represents a loss in gross contribution (price minus variable cost) of $.04412. Hence, B's revenue would be reduced by about $ 2,300 per week. When this weekly loss is converted to its present value, based on a yearly discount of 10% over a five-year period it is equivalent to an outright cash loss of $ 688,200.

In a similar manner, the payoffs for each possible chain of decisions and outcomes have been estimated and are shown in Figure 1. These estimates are used, together with the estimated probabilities for "Nature's" plays, to derive expected payoffs for each of B's possibilities. Of course, this method

of estimating payoffs is oversimplified. In practice, two other factors would have to be considered:

a. In addition to the direct effects on revenue and costs, some of the outcomes might involve nonmonetary consequences, such as the stigma and the inconveniences of litigation.

Figure 1 Illustrative Analysis of Decision Possibilities and Outcomes—A_1: B Refuses Blue's Request (*Payoffs in Thousands of Dollars*)



b. Some of the monetary losses may be so great (for example, the sequence A_1, S_{11}, A'_{112}, S'_{1121}) that they imply bankruptcy for B. In such a case, the loss is really greater in relation to less drastic outcomes than is implied by the payoff measures.

5. *Assessment of Probabilities.* Now it is necessary to assign probabilities to each outcome under each possible decision. As suggested previously, this is a very difficult task, but one that must be done at least implicitly in every decision of this kind. The assessments shown in Figure 1 are based

on the experience of one of the authors in studying the wholesale bakery market over a number of years, together with conversations with several leading bakery executives.

6. *Computation of Expected Payoff and Choice of Optimal Decision.* Given the individual payoffs and their probabilities, computation of the expected payoff for each decision possibility is a straightforward matter. This is illustrated in Figure 1.

In this analysis, it is necessary to start at the *end* of each chain of acts and outcomes (the extreme right in Figure 1) and work "backward" to the initial set of decision possibilities. Consider, first, the branch corresponding to A_1, S_{11}, A'_{111}. If B chooses A_1, then A'_{111}, there are two possible outcomes: S'_{1111} and S'_{1112}. The payoff under S'_{1111} is—$688,200 and under S'_{1112} it is—$27,500. The estimated probabilities are 0.30 and 0.70, respectively. Hence, the *expected* payoff at the "fork" representing A'_{111} is .30 (—$688,200) + .70 (−1,554,000)= −$225,700.

Similarly, the expected payoff for A'_{112} is—$1,478,900. Obviously A'_{111} is preferred to A'_{112}. Hence, in Figure 1 the branch corresponding to A'_{112} has been blocked off; it would never be followed if A'_{111} were available.

It follows that the expected payoff for S_{11} is—$225,700, the "better" of the two second-round decision possibilities available to B. In similar fashion, the payoffs for S_{12}, S_{13}, and so on have been estimated and are shown in Figure 1.

Now the expected payoff for the initial decision Alternative A_1, can be computed: it is

$$.05\ (-\$\,225{,}700 + .05\ (-\$\,225{,}700) + \ldots + .50\ (0) = -\$\,73{,}000$$

The same procedure has also been followed for A_2, A_3, A_4, and A_5; and the results are summarized in Figure 2. In this diagram the second "round" has been omitted and only the initial choices by B and "Nature" are shown. The figures were derived, however, by an analysis of the second-round payoffs and probabilities as illustrated for A_1 in Figure 1.

The analysis shown in Figure 2 suggests clearly that the optimal act for Baker B is A_5, the price and service differential system. This does not, of course, imply that this policy is optimal for all wholesale bakers, since it reflects the specific market conditions, cost structure, and payoff probability estimates of Baker B which may not be valid in another context.

Examination of Figure 2 also sheds some light on the market behavior of wholesale bakers during the post-war period. The most common response, of course, has been "A_1" a refusal to produce private brands or to offer acceptable alternatives. While this response has been generally unsuccessful, and wholesale bakers have lost market position, it does have the merit that it avoids any of the possibly disastrous consequences of A_3 and A_4.

Figure 2 Summary of First Round of Decision Possibilities, Outcomes, and Payoffs for Wholesale Bakery Private Label Decision (Payoffs in Thousands of Dollars)

A_1 IGNORE OR REFUSE -73.0		
A_2 COUNTER OFFER -265.2	S_{21} Z SUPPLIES BLUE AND OTHERS (.02)	-225.7
	S_{22} Z SUPPLIES BLUE ONLY (.03)	-225.7
	S_{23} A OR C SUPPLIES BLUE (.01)	-188.1
	S_{24} BLUE ACQUIRES BAKERY (.01)	-370.5
	S_{25} BLUE WAITS, HARASSES B (.01)	-75.0
	S_{26} BLUE WAITS (.02)	0
	S_{27} BLUE ACCEPTS A AND C FOLLOW SUIT (.90)	-275.1
A_3 REDUCE PRICE BY .02 -1337.0	S_{11} Z SUPPLIES BLUE AND OTHERS (.05)	-225.7
	S_{12} Z SUPPLIES BLUE ONLY (.05)	-225.7
	S_{13} A OR C SUPPLIES BLUE (.05)	-188.1
	S_{14} BLUE ACQUIRES BAKERY (.05)	-370.5
	S_{15} BLUE WAITS, HARASSES B (.30)	-75.0
	S_{16} BLUE WAITS (.50)	0
A_4 ACCEDE -260.7	S_{41} BLUE ACCEPTS, A AND C OFFER SECONDARY (.70)	- 22.2
	S_{42} BLUE ACCEPTS, A AND C REDUCE PRICES (.10)	-1442.7
	S_{43} BLUE ACCEPTS, A AND C SUPPLY COOP I AND YELLOW (.20)	- 504.3
A_5 PRICE DIFFERENTIAL SYSTEM+125.2	S_{31} Z SUPPLIES BLUE AND OTHERS (.03)	-225.7
	S_{32} Z SUPPLIES BLUE ONLY (.04)	-225.7
	S_{33} A OR C SUPPLIES BLUE (.02)	-188.1
	S_{34} BLUE ACQUIRES BAKERY (.01)	-370.5
	S_{35} BLUE ACCEPTS, A AND C DO NOT MEET (.05)	- 458.8
	S_{36} BLUE ACCEPTS, A AND C MEET, B RETAINS ADVAN. (.10)	- 1249.2
	S_{37} BLUE ACCEPTS, A AND C MEET, RETURN TO ORIGINAL SHARE (.75)	-1554
	S_{51} Z SUPPLIES BLUE AND OTHERS (.05)	-225.7
	S_{52} Z SUPPLIES BLUE ONLY (.05)	-225.7
	S_{53} A OR C SUPPLIES BLUE (.05)	-188.1
	S_{54} BLUE ACCEPTS, A AND C FOLLOW SUIT (.60)	0
	S_{55} BLUE ACCEPTS, A AND C REDUCE PRICES (.25)	+ 828.5

The specter of price war has tended to dominate industry thinking. It is difficult to understand the reluctance to establish price and service differentials for large customers. It may be, of course, that bakery executives have feared price war as a possible outcome of this policy as well as of A_3 and A_4. The restraints imposed by the commission system of driver compensation (which limits the potential savings of limited service) have no doubt also played a part.

Values of Decision Theory Approach

Among the most important values of this formal approach to decision problems is that it serves to focus attention on the critical issues involved. In the present example, some of the key questions that naturally arise from the analysis are the following:

1. If a wholesale baker supplies chains with private brands, will other customers retaliate by partial or complete "boycotting"? Is this response permanent or transient? Surveys and limited tests markets can answer this.

2. Under what circumstances can a chain (or coop or voluntary chain) "afford" to acquire its own bakery plant through backward integration? If these conditions can be identified, we can assign more meaningful probability estimates to the outcome, "Blue gets own bakery plant", as well as better evaluations of its payoff. Cost analysis and careful assessment of the volume needs of Blue Chain may shed light on this.

3. If a bakery forestalls a request for a private brand by offering a secondary brand in its place, does this diminish the future probability of the chain renewing its request? If a secondary brand is offered for sale, what percentage of former regular brand buyers (ultimate consumers) will shift to the lower-priced brand? How does this depend on the amount and type of advertising and sales promotion, if at all?

4. If price differentials based on quantity and service are established, which customers will be able and willing to take advantage of them? What will the impact on average revenue per unit be?

5. How does a given decision affect possible future courses of action? For example, does the introduction of a secondary brand at one time make the decision to supply private brands in the future more or less feasible? Do secondary brands have any effect on the assumed "resentment" of independent retailers toward bakers who supply chains with private brands?

Although these questions cannot be answered now, at least partial answers to some of them could be obtained through properly designed research efforts. A major advantage of structuring a problem in formal terms is to indicate the directions that research efforts should take.

It is natural to ask whether or not formal decision theory is "practical." Is it feasible to carry out such analyses of marketing problems, and does the use of such an approach offer any advantages over current practice?

In conclusion, there are side benefits. The process need not be time-

consuming; however, by preventing a hurried selection of the most obvious conclusion, the way is paved to creative thinking in a manner that fosters dispassionate communication about the problem. There is a strong probability that through such an approach research activities necessary for solution of the problem will be more clearly defined and their application explicitly anticipated.

Finally, the principal advantage of formal decision theory over informal executive judgment is implied by the word "formal". The type of analysis illustrated here requires the decision maker to *formalize* his thinking regarding a problem—to structure his judgment and to "put it down in black and white". That this is likely to improve the quality of executive judgment seems self-evident. Whenever a decision must be made and its outcome is not known with certainty, some informal equivalent of the decision theory must be employed.

V/MAJOR MARKETING STRATEGIES

21/*Product-line Policy*

JOEL DEAN

Decisions regarding the composition of the firm's product-line are significant not only for the firm but also for the entire economy. No other single management activity influences a firm's prosperity as much as the planning and shaping of its product mix. This article discusses certain economic concepts which can be used by management to decide what product-line policy to adopt.

I. INTRODUCTION

A company's conscious competitive actions have three facets: (1) product policy, (2) promotional policy, and (3) pricing policy. Product policy commands not only managerial attention, because of rapid changes in technology and demand; it is also significant for the entire economy, since it is the mainspring of economic progress and hence an important test of a company's social contribution.[1]

The purpose of this article is to examine, from an economic standpoint, the managerial problems of product coverage in a multiple-product firm. We are concerned with only one phase of product policy, namely, product coverage —that is, decisions on what end products the company will make and sell. Product improvement—the other phase of product policy—is not examined here. We shall attempt to sketch a framework for a policy approach to product coverage, that is, a set of standing answers to recurring product proposals.

The term "product" in this discussion will mean an end product offered for sale by the firm. Intermediate products produced as a consequence of verticle integration and parts and components purchased for inclusion in final products are excluded from this analysis.

[1] Although most modern firms make several products. economic theory has been developed on the premise that each firm makes only one product. The reasons for such an inadequate premise are to be found partly in the historical origins of theory and partly in the simplicity of theoretical analysis when it is confined to single-product output. Determination of the costs of individual products in a multiple-product company is both conceptually and empirically difficult. The neglect of these problems may also be due to the notion that management views each product as a separate business activity with the characteristics of single-product firm, but this approach has little theoretical and no practical support.

SOURCE : From *Journal of Business*, University of Chicago Press, vol. 23, October, 1950, pp. 248-258. Joel Dean : Professor of Business Economics, Columbia University.

The term "product-line" will be used here in a broad sense to include all the products manufactured by the firm. The term can be used in a narrower sense to refer to groups of products that are related either on the marketing side as being complements or substitutes or on the production side as being made from the same materials or by similar processes.

In a dynamic economy, where product monopolies are characteristically transient and where product development is a major facet of competitive rivalry, economically sound decisions on additions to the company's product coverage are obviously of great importance. Three important problems encountered by top management in formulating policy on adding new products are: (1) scouting out potential product additions, (2) appraising these proposals and making the product selection, and (3) launching each new product venture in a way that gives it a maximum chance of success.

The first, development of a flow of promising proposals for candidate additions to the company's product-line, is fundamental to sound product additions. For many companies product research is the main instrument. Others license new product inventions or buy them directly from independent inventors and corporate research departments or through professional "product-finders". Product proposals also come from customers, from the company's marketing staff, from small companies that want to sell out, and from independent inventors.

The third top management problem—launching the new venture—involves questions of refinement of the product design, selection of market targets, methods of distribution, pricing the new product, and making capital expenditures for production and marketing facilities.

Top management's second problem—the appraisal of candidate product additions—is the central concern of this article. Even in large, well-managed companies the methods used in selecting product additions leave much to be desired. A survey of the experience of two hundred leading packaged-goods manufacturers in the post-war development of new products revealed that only 20 per cent of the products put on the market actually turned out to be money-makers.[2] For most of these products, expectations had been far too optimistic. This dismal experience showed that product innovation required more careful selection and more deliberate planning than these companies had anticipated. A rich mixture of market research, product testing, adequate financial resources, and persistence was needed.

II. POLICY PROPOSALS

Management needs a rational routine for this appraisal in the form of a set of criteria to guide its analysis. In this section we consider what questions

[2] "The Introduction of New Products," a survey made by Ross Federal Research Corporation, for Peter Hilton, Inc.

management should ask and what criteria it should establish. The discussion has three parts: (*a*) standards of prospective profits from the candidate product; (*b*) considerations of product-line strategy; and (*c*) specific criteria of acceptability of new products.

(*a*) *Standards of Profitability*

Usually the most important question about a new product is its prospective profitability. If the sole objective of the enterprise were to maximize profits in a strict sense, all considerations affecting additions to the product-line could be subsumed under profitability; to a degree, the nonprofit considerations are merely indicators of long-run profit prospects. Yet, business motivations are more complex than has been assumed in economic theory. They encompass objectives such as external corporate life, market share, volume growth, comfortable cash reserves, assured tenure for management, and pleasant employee relationships. These purposes can be forced into a concept of long-range profit maximization; but, when this is done, the concept evaporates for analytical applications.

Prospective profitability, in the narrow, cash-return sense, is nevertheless the key consideration. Candidates for addition to the product-line should be ranked in a priority ladder according to profitability and should be selected from the top down, except in unusual strategic circumstances. But a profitability ladder raises four questions: (1) What concept of profits is relevant? (2) What form of profit standard should be used? (3) How should profit prospects be measured? (4) What rejection level should be established?

1. Profit Concepts. The relevant concept of profits for product-line additions is not always clear; it depends on circumstances. The basic choice lies between some notion of incremental profits and the concept of net profits over full cost. Incremental profits refer to the difference in the firm's profits with and without the addition of the product in question. It thus credits the new product with the whole increase in profitability of existing facilities that its introduction produces. In contrast, the use of net profits means that some of the fixed overheads are loaded onto the new product, and cost burdens of existing products are correspondingly lightened.

If they are extended over a long enough period to encompass the probable-life-cycle of the new addition, incremental profits are the relevant concept. Sometimes product additions are so short-lived that incremental profits are the difference between price and short-run marginal cost. Examples are subcontracting work, war work, and production of specially designed products in a job shop. In this special case the usual strategic considerations that enter into product-line additions are rather unimportant. But here, as in a long-range setting, incremental profits must be measured against the profits that could come from the best alternative use of money, time, and facilities. If the alternative is idleness then presumably any incremental profits will justify the addition of the product. If, as is more

common, the alternative is to use resources on some other product, the alternatives return sets the standard of minimum incremental profits.

For more durable additions to the product-line, short-run marginal cost is not the correct concept for estimating the added profitability of the new product. The adoption of a new product carries with it explicitly or tacitly the commitment to stay with the new venture at least until it has had a fair trial, and possibly longer. Additions to common costs that are often unforeseen at the time of the introduction of the new product are likely to occur, so that the businessman's rule of thumb of loading on the new product its full share of common overhead is often the most appropriate method after all.[3]

2. *Form of Profit Standard.* In order to compare the profitability of alternative uses of facilities, profit standards must be stated in a form that is relevant for ranking them. What form should a profit estimate take—unit margins, return on investment, aggregate dollar profits? The most general form is the total dollar income over the whole life of the product minus the total outlay to produce it. But in cases where the new product is a permanent addition, it may be easier to measure the profit return per unit of some fixed, bottleneck factor of production absorbed by the new product. Such a bottleneck factor might be executive time, machine time, or materials (e.g., steel during the post-war period of shortage and private rationing by producers). In the most usual case it is strictly limited funds for capital outlay on the new product (e.g., those available from retained earnings). In this case, return on incremental investment is the best measure. This form of profit measures the income-producing efficiency of the product relative to alternative uses.[4]

3. Measuring Profit Prospects. The major problem in estimating profitability is to make decent projections of revenues and costs. Ideally, these should cover the expected life-span of the product; in practice, three to five years is the limit of visibility. Forecasts of demand and costs are extremely speculative for new products; indeed, they are much more so than many firms realize. In explaining the failure of new products, the two hundred companies mentioned at the beginning of this section put particular emphasis on (*a*) inadequate market research and (*b*) underestimated selling-cost requirements.

The hardest cost estimates to make are estimates of development and selling expenses. Pressure to get the product onto the market may cut

[3] The experience of many business organizations is that new products added to mop up overhead actually produce new overheads and, in addition, incur untraceable costs, such as added drain on executive time and energy. These costs make their incremental profits quite different from those indicated by short-run marginal cost estimates.

[4] In the extreme case, where all resources are idle and there is just one candidate product which itself cannot absorb any resource completely, the rate-of-return form is inapplicable, since efficiency is not a consideration in production.

short the research that is needed to work all the bugs out of the product. This can be an expensive short cut, since the bad impressions made on the first venturesome customers may cause delays and perhaps foreclose market acceptance.

Products vary widely in forecastability; for some products no refined calculations are possible at all. Consequently, any use of profit standards for appraising the candidate product is precluded. Going into some products is like making a bet on the horses. Decisions then must rest more completely on grand strategy and on criteria of acceptance like those discussed later in this section.

4. Level of Profit Standards. To determine how large an incremental profit should be to justify the addition of the product to the line requires some standard of adequate return. Ideally, the market cost of new capital should always be the criterion, but it is not widely used. One alternative standard is supplied by the competition of rival product additions and rival internal investments of all sorts for the company's limited resources. Under such a plan, a candidate product will be rejected unless it promises a rate of return that exceeds the next best use for funds. Another standard (where resources are not limited) is in terms of some historical return on investment. Thus some companies require a minimum return equal to the company's ten-year average; others develop an arbitrary standard of adequate profits of this type that is not specifically related to anything. For example, a large automobile manufacturer, for unknown reasons, has adopted 30 per cent before taxes as a standard. Sometimes the standard is formulated in terms of unit net profit margins at some normal output rate. One company, for example, in the drug field, has a minimum 50 per cent margin. Presumably, such a high standard reflects competition of highly profitable alternative products; thus it is likely to be an opportunity cost standard.

5. Summary. The pivotal test for the addition of a new product is its profitability. If profit maximization were the sole goal of the enterprise, this test would encompass all others, but pluralistic motivation makes the other goals relevant as well. The relevant concept of profits is incremental returns over the appropriate time period, that is, what addition the product makes to enterprise profits over its life-span. The profit prospects must be expressed in a form that allows significant comparison with alternative uses of labor, plant, and time. It is common practice to establish some standard of minimum acceptable earnings, but this floor should really be determined by profitability of alternative opportunities, that is, by external conditions.

(b) *Product Strategy*

Supplementing tests of profit prospects are general considerations of strategy. These are to a degree composed of the specific acceptance criteria discussed in the next subsection.

Multiple-product "strategy" is a shorthand name for the company's long-

run purposes in product diversity. Although strategy is usually focused on profits in the long run and is confined by economic limitations, it is also affected by the technical abilities and personal preferences of management. It is a position consciously taken to simplify decision-making at crucial points. Presumably, under an enterprise system, the purpose of strategy is to make money, in the long run at least. Yet, as we have seen, this is not the whole story. In a going concern, product-line strategy usually has historical roots—sometimes in the company's original purposes but often later in a basic merger or an empire-builder's dream.

Companies with no clear product-line strategy have been conspicuously profitable, and many mergers have grown in spite of the seeming lack of kinship among the products of the merging companies. Other companies say that they have a product-line policy, although they are simply rationalizing a product that grew without pattern. Yet considerable evidence indicates that many well-managed, mature, multiproduct enterprises do have a logical product-line that serves as a real guide to action, as is demonstrated by both product surgery and acquisitions that are consonant with announced product policies.

A few examples will show the general character of product-line strategy. A leading electrical manufacturer conceives of its broad product-line policy as a beneficent circle. Its apparatus line generates and transmits electricity; its industrial products and its lamps and home appliances build up the demand for power and help lower the public utility companies' costs; as a result, the price of current is reduced and the demand for its industrial apparatus to produce more current is expanded.

A large producer of insulating materials views its product-line strategy in terms of a complete coverage of the full thermal range, with adequate alternatives throughout the range. The company wants to be considered a specialist in insulation, able to deal with any insulation problem impartially. It assumes that if it sells various alternative devices itself, customers will rely on it to select the most effective technique or material for their particular uses. The product-line is an implement for selling a complete insulation service.

Product-lines are sometimes conceived in terms of a framework of know-how. Thus one company views its know-how as essentially paper-making techniques. The pivotal machine converts wet pulp into dry, flat products. The company refuses to add products that depart significantly from this framework of know-how (e.g., products that involve intricate metal stamping or assembly operations). A leading automobile manufacturer looks upon its product-line as essentially motive-power units and incidentally produces the bodies and wheels that use the power. Chemical companies sometimes conceive their product-line boundaries in terms of the equipment and processes that have been peculiar to the chemical industry. But the constant stream of discoveries in by-products and methods has recently made these

borders quite elastic. Chemical companies have been led toward textile and paper processes, and oil companies into chemical industry research and processes.

Sometimes product-line strategy is strictly defensive. One of the building material companies, for example, has in the last twenty years been guided in its product acquisitions by the broad line of building materials offered by the two giants in the industry, whose coverage of building materials was formerly far more comprehensive than the company's own. This policy was in part based on the belief that basic distribution economies were possible in selling a broad and related line of products all handled by the building materials dealer.

The outer limits of a product-line (like the outer limits of an industry) are typically framed in terms of common raw materials, production processes, distribution channels, or final uses. These criteria—which are alternative and occasionally contradictory—are often less fundamental for determining product-line strategy than are the competitive relationships in terms of tactics for increasing profits and rivals' reactions to these tactics. Thus considerations of product-line strategy reflect technical as well as competitive limitations on management. They thus become the groundwork for that nebulous but real part of the company—"grand strategy."

(c) Acceptance Criteria for New Products

Because estimates of probable profits from new products have wide margins of error and cannot be projected far into the future, and because maximizing financial profits is not the only strategic objective of the company, supplemental standards of acceptability for new products are needed. In theory, these standards are not so fundamental as are direct estimates of profits. They rest on empirical characteristics of the firm. Nevertheless, since they are frequently easier to appraise than are profitability standards, they have much value in themselves. A candidate product can be compared with the existing produuct-line in terms of :

1. Interrelation of demand characteristics with the existing product-line
2. Use of the company's distinctive know-how
3. Use made of common production facilities
4. Use of common distribution channels
5. Use of common raw materials
6. Benefits to existing products

These criteria can supplement estimates of the direct profits from adding the product.

1. Interrelation of Demand Characteristics. An important factor in considering new products for the product-line is the relation of their demand characteristics to the characteristics of the existing group of products. Since the right combination of products in the product-line has powerful promo-

tional value, this interrelation is a primary criterion of acceptable product additions.

What are the kinds of demand relationships between the candidate product and the existing product that will improve its chances of success? Two kinds may be distinguished: the new product may be a substitute, or it may be a complement. Rigorously speaking, the distinction may be framed in terms of cross-elasticity of demand. The candidate product is a substitute if its sales fall when the price of an existing product is reduced (other things equal). If its sales gain, then it is a complement.

There are various kinds of substitute relationships in demand that favor admission of the candidate product. Sometimes the new product, by extending the range of coverage, acts as a hedge against uncertainties and shifts in consumer demand. The garment industry provides many examples of product diversity to reduce risks that stem from buyers' ignorance and style change. Addition of paper, glass, and plastic containers to the product-line of manufacturers of tin cans is probably partly a hedge against a revolution in container materials. Another type has to do with innovations. The acceptance of a new product which makes obsolete the company's existing product is justifiable, primarily because obsolescence is inevitable. The present would be displaced by new ones in any event—by competitors, if not by the company itself.

Complementarity is the other general kind of demand relationship that is important in testing product additions. Typically, the question is whether the new product can fit into the pattern of demand so that the company's name established by the present products can help to sell the new one. In a sense, this condition shows excess capacity in advertising. Occasionally, another type of complementarity exists when a spectacular new product adds prestige to the existing line. Closely related to the promotional assistance of a new product, and more fundamental and common in most business, is the ability of a new product to make the present product-line either operate or sell better. Thus the addition of fine-grain film to the product-line of a camera manufacturer who sold high-speed lenses brought out the full usefulness of the high-speed lens.[5]

A second demand characteristic is the entity of the product group as a whole. The promotional advantages of a full line often make the whole greater than the sum of its parts. The tactical advantage of a full line of sizes, grades, and supplementary products in getting good dealers and in merchandising high-margin specialities makes this kind of interrelationship of demand a commonly used basis for product-line policy. Some would go

[5] Accessories and extras, particularly in the early days of the automobile industry, served both as promotional balloons and as functional improvements. For example, the roof of the 1905 Stanley Steamer was an extra, and the self-starter remained an extra for most cars for years.

so far as to deny the validity of analyzing sales performance for any individual member of a product group, because each member contributes to the sales and profits of the other members and because the economic unit of merchandising activities is the whole group of products.

A "full line" may be defined as the broadest coverage of related products successfully sold by a rival manufacturer. This concept brings out the defensive nature of a full line policy. By carrying a broad product-line (relative to rivals), a manufacturer has advantages in getting good dealers and in efficiently aiding in their merchandising activities by training, co-operative advertising, and "point-of-sale" materials. Consequently, whether the candidate product is needed to match a competitor's breadth of line is an important criterion.

2. *Distinctive Know-how.* Sometimes the determining consideration in making product-line decisions is that new products must make use of the company's distinctive and almost personal source of differential advantage. An example is the M.W. Kellogg Company, which sells engineering skill in the design of giant processing equipment for chemical and petroleum industries. Fabrication and construction are carried on but are subsidiary to the principal product—technical pioneering skill. One of the company's product-line specifications is that products must fully utilize this asset and must be suitable vehicles for the sale of this service.

One of the large electrical manufacturers uses this same test in an indirect fashion. Only products that are highly engineered and that call for intricate manufacture and assembly methods are regarded as suitable, partly because the market that is developed for such products will be protected from easy invasion by these know-how requirements.

Sometimes the distinctive asset is research power. It is a fairly conscious policy of one of the large chemical companies to choose only those new products that have been developed by its product research organization and that are distinctive enough in both chemical and manufacturing requirements to be protected for some time to come. The counterpart of this policy is to abandon products when they have degenerated to the status of commonly produced commodities. The company advances to new monopoly positions as fast as economic progress wears down the walls of the old.

For many companies, research capacity and experience is the major phase of its distinctive know-how. In such a case an admissibility standard should be framed in terms of whether the candidate product is susceptible to the kind of improvement that will put the research capacity of the company to its highest and noblest use.

Another test that may fall into this category is the volume potential test. Many large companies scorn product additions that would meet other tests but that do not promise a sufficiently large volume of sales to use the powers of a large company fully or to overcome its disadvantages of inflexibility. They

look upon small-volume new products as requiring an organization that is quicker on its feet than a large company can expect to be.[6]

3. Common Production Facilities. The requirement that the candidate product use existing or highly similar production facilities is a widely used test of admissibility. When applied strictly to the use of existing facilities, it depends on economies of mopping up excess capacity, which are short-lived. Hence, to this extent, the test has perils of using short-run incremental cost when long-run increments are involved.

When the test is framed in terms of requiring similar production facilities, it does not run these risks, since it is not then short-run in concept. In this form it bears a close resemblance to the test of distinctive know-how. Similar production facilities are, in large part, a monopoly return on specialized knowledge and concentrated effort.

Most product additions fall somewhere between the extremes of idle capacity and familiar production methods. They normally make use of unused capacity of some facilities, at least common overheads, but often require additional facilities that, though different, have much in common with those for existing products.

4. Common Distribution Channels. Another popular test of the admissibility of a new product is that it must permit effective marketing through the same distribution facilities used by the company's existing products. In economic terms this criterion is sometimes used to mop up unused capacity. More often, the economies result from savings of specialization or of large scale.[7]

The test is most applicable when the company has a single or a clearly dominant distribution mechanism. A company whose only channel is direct sales to retail stationers might require that a new product be the kind that could be handled by stationery stores and sold by the sales force that serves them. Manufacturers' post-war experience with new products travelling through unfamiliar distribution channels and requiring a different sales organization was, on the whole, quite disappointing.

Even though a product meets this distribution test, there are limits to the number and variety of products that can be efficiently sold by a salesman if he is to be more than a mere order-taker.

Sometimes the selling power rests on no more than a blanket brand name. Products that can be sold compatibly under a well-known company label are sometimes added even though they are sold through different channels and require a specialized sales force.

[6] A systematic search for products developed by large research organizations whose volume prospects were too small for the developing company to commercialize was made recently by an outfit which has shown considerable success in developing fairly diverse small businesses. Professional "product-finders" also prospect here for their 5 per cents.

[7] A special case of distribution mechanism economies are the savings of carload mixed-shipment rates for products that come under common freight classifications. This economy has been an important one in inducing building materials manufacturers to broaden their product lines.

In addition to savings of specialization and scale, established marketing organizations of salesmen and distributors constitute a source of monopoly advantage. Frequently the dealer organization is the company's most valuable and hardest to duplicate asset. Development of adequate distribution is sometimes a major barrier to entry. Hence the selection of products that will most happily utilize this facet of monopoly power is an important element in successful product-line development.[8]

5. *Common Raw Materials.* Many companies look for product additions that use the same basic raw material or its by-products. The rubber industry's product-lines exemplify the application of this test. A company with extensive asbestos mining properties has directed its product research toward developing new products that will use not only asbestos but also the short fibers and other wastes that are left after the regular asbestos products have been manufactured.

The economic rationale for this test rests on two points: First, the basic source of raw material is controlled by the company (e.g., asbestos mines or bauxite deposits); the addition of products that use the common raw material may help develop the market for that material. They can also put the company in a position to exploit differentials between the prices of raw materials and finished products. Second, important savings result from intimate familiarity with intricate processing methods. For this reason the petroleum companies rely heavily upon the common-material test.

6. *Benefits to Present Product-Line.* The foregoing tests depend largely on the contributions that existing products and facilities can make to candidate new products. This "benefits" test, in contrast, asks what the new product can offer to existing products. Contributions through interrelationship to demand have already been mentioned; contributions through experience in new types of production methods which have applicability to old products have received much attention as a result of the peacetime lessons of war production. Similarly, post-war "defense" research and pilot production supported by the military organization illustrate this educational contribution of some new products. Private ventures into new products simply for educational benefits in producing old products are long bets which few companies can take. Old products are a generic class subject to continual evolution. The educational benefits from an added product, either in research, production methods, or even demand interdependence, apply not only to the present products. Often, more importantly, these benefits apply to the projected path of development of these existing products. Remington Rand's recent acquisition of a company making a new type of "electronic brain" computing machine may illustrate this kind of contribution along the paths of projected development of existing Remington

[8] The question is not whether the new product can be distributed at all through the company's marketing organization but rather whether it can be distributed economically, both as compared with alternative candidate products, which might otherwise use these limited distribution facilities, and as compared with selling the product to other distributing organizations, while itself manufacturing it.

equipment.

(d) Dropping Old Products

The problem of determining what products should be dropped is, in general, the converse of the problem of selecting products for additions. There are, nevertheless, certain differences.

Broadly speaking, when a product's profit or sales behavior is absolutely or relatively unsatisfactory, there are four choices: (1) improve the present operation and keep the product; (2) keep on making it but sell it in bulk for others to market; (3) keep on selling it but buy it from others who can produce it more advantageously; and (4) stop manufacturing it and stop selling it.

The first three are outside our present discussion. The criteria for eliminating a product altogether are substantially the opposite of those for product additions. One approach, therefore, is to screen products that look sick enough to be candidates for deletion through the same kinds of suitability tests discussed above. Another approach is to appraise the product in terms of profits and sales results, such as whether it is slipping in market share, whether it accounts for a trifling percentage of the company's sales, and whether its net or incremental profits are satisfactory as compared with other products or with products that might be produced if it were eliminated. A product that fails the suitability tests and also shows up badly in profit results is more clearly a candidate for total elimination than one that is inherently suitable but temporarily sick.

In applying the profit tests, a distinction must be made between the long-run and the short-run profits. Products that show comparatively low or negative net profits may still have incremental profits, that is, they may make contributions to general overheads that would not be made if the product were dropped. This sort of short-run consideration can lead to serious errors if it is projected too far into the future. Presumably, the growth of more profitable products should soak up the excess capacity that produces these incremental profits, and the continual stream of candidate products may in the long run produce a greater contribution to overheads than the old product that is retained because of its incremental showing.

The main economic difference between dropping and adding a product is, of course, sunk costs. Deletions that are decided upon solely on the basis of net profit, with no consideration given to the fact that costs are sunk, can lead to short-run losses. But, again, it may be that this is a more valid criterion than it appears to the economist, because executive time squandered on the squeaky wheel and on passed-up opportunities to substitute new and better products over-balances the sunk-cost element.

III. SUMMARY

1. Product-line composition is a major facet of modern competition, and a

company's achievements in new and improved products are an important test of its social contribution.

2. An underlying reason for adding a new product to the line is that it utilizes excess capacity. Broadly conceived, excess capacity occurs when it would cost the multiple-product firm less to make and sell the new product than it would cost a new company set up to produce only that product. Vertical integration and research also promote multiple-product lines.

3. Prospective profitability, in the narrow, cash-return sense, is a key consideration in the selection of product-line additions. The relevant concept is incremental profits over the probable life-cycle of the candidate product. Some standard of adequate incremental return is needed for this profitability test. Ideally, it should be the firm's market cost of new capital with allowance for special risks. In practice, different standards are used, including some average of the company's past return, return from the best alternative investment, or some arbitrary profits goal.

4. Product-line strategy is a semi-independent consideration, though presumably the purpose of strategy is to make money in the long run. Strategic considerations reflect personal, technical, and competitive limitations on the range of product diversity. This policy short cut may center on putting the firm's distinctive strength to its highest and noblest use.

5. How the candidate product's demand dovetails with that of existing products is an important selection criterion. Complementary or substitute relationships or the tactical advantages of a full line underlie the more conventional test of common distribution channels.

6. A candidate product which is made from common raw materials, uses existing production facilities, and/or can be effectively sold through the same sales organization is likely to mop up excess capacity and use the company's distinctive know-how.

7. The problem of deciding on what products to drop is the converse of adding products, except that long-run cost functions are not reversible and that specialized capital is not perfectly mobile. Hence the possibility of salvaging product-line mistakes by partial retreat should be explored before considering total elimination.

22 / *A Method For Making Product-Combination Decisions*

ROBERT K. JAEDICKE

An important part of any product policy is a set of criteria governing product decisions. First, there are the criteria which reflect company capabilities. Second, the alternative investment opportunities available to the company must be considered. This article describes and illustrates the value of using the incremental profit concept in evaluating product ideas.

The manager of any business firm faces at least three important classes of decisions. They are (1) how to produce; (2) how much to produce; and if more than one product is involved, (3) what combination of products to produce. The first class of decisions involves the problem of choosing that combination of men and equipment which will produce a given quantity of output at the least cost. The second class of decisions has to do with the choice of the most profitable quantity of output to produce and sell. Inherent in the output decision is the third class of decisions, what combination of products should be produced and sold.

Product-combination decisions constitute a very broad and important group. Such decisions range from whether to make or to buy a part or subassembly to the best allocation of floor space among departments of a department store. Yet, as important as this type of decision is to the firm manager, if he were to turn to existing accounting techniques and to accounting literature for a complete and definitive answer, he would probably be quite disappointed. The purpose of this article is to set forth a sound approach to product-combination problems which might be used as a basis for managerial decision making.

THE CONTRIBUTION-MARGIN APPROACH

The contribution-margin of a unit of product is defined as the excess of the selling price over the variable costs of producing and selling the product. Variable costs are those costs which will change in total as a result of changes in output. However, the variable cost *per unit* is assumed by the accountant to be constant. Hence, the contribution margin, with a given selling price, is also constant per unit of product. The total

SOURCE: *From Business News Notes*, A Publication of the School of Business Administration, University of Minnesota, No. 38, April, 1958, pp. 1-4. Robert K. Jaedicke: Associate Professor of Accounting, Stanford University.

contribution margin for any accounting period, however, depends on the number of units sold. The assumption that the variable costs and the contribution margin are constant per unit is probably valid as long as the firm produces within the normal operating range. Once the normal operating range is exceeded, the variable costs per unit may increase as the number of units increases. This same qualification also applies to the unit selling price. If the number of units sold is to be increased by any significant amount, the selling price per unit will undoubtedly have to be decreased.

The contribution margin concept is an attempt to focus the attention of management on variable costs rather than full costs. The contention is that the contribution margin per unit is more significant for decision making than the net profit per unit. The latter would be computed by deducting fixed costs from the contribution margin. This approach would be used primarily for internal profit reporting: for example, to show performance by department or other subdivisions of the company. The form of the aggregate income statement sent to the stock-holders and creditors need not be affected by the contribution-margin concept.

If internal reports are submitted to management on the conventional or full-cost basis, the income statement would appear as shown in Figure 1. This example represents a hypothetical department store with three departments. The Cost of Goods Sold consists of the purchase price of the goods sold together with adjustments for freight costs, etc. Assume that Selling Expenses represent sales commissions, which are 5% of sales, and Administrative Expenses are the rental charge on the building. The rent, although fixed, is allocated to the departments as a percentage of the sales volume of each department.

FIGURE 1

Income Statement By Departments

For The Year 195X

	Totals	*Department 1*	*Department 2*	*Department 3*
Sales	$100,000	$ 50,000	$30,000	$20,000
Cost of Goods Sold	80,000	45,000	25,000	10,000
Gross Margin	$ 20,000	$ 5,000	$ 5,000	$10,000
Other Expenses :				
Selling Expenses	$ 5,000	$ 2,500	$ 1,500	$ 1,000
Administrative Expenses	6,000	3,000	1,800	1,200
Total Other Expenses	$ 11,000	$ 5,500	$ 3,300	$ 2,200
Net Profit or Loss	$ 9,000	$ (500)	$ 1,700	$ 7,800

The conventional income statement by departments, as given in Figure 1, has serious limitations if the data are to be used in decision making. The

Gross Margin, for example, cannot be used as a measure of departmental profitability because there may be variable expenses of operating a department other than the cost of the goods sold. Also, in a manufacturing firm, some fixed costs may be included in Cost of Goods Sold. In a retailing operation, this criticism may not apply. The net profit has limited usefulness because of the allocation of fixed expenses to the departments. Referring to Figure 1, it may be unwise to eliminate Department 1, which operates at a $500 loss, because the over-all profit of the store will be decreased if the building rent is a fixed cost.

Limitations in the conventional income statement, such as those mentioned above, have set the stage for the contribution margin approach. This approach concentrates the attention of management on sales, variable costs, and the contribution margin rather than emphasizing the departmental gross margin and net profit. A contribution margin income statement by departments using the same data as given above is shown in Figure 2.

The justification for this type of report is that in planning decisions regarding the object of costing (in this example the object of costing is the department) the pertinent cost is the variable cost rather than the total cost. Fixed cost, therefore, is not distributed to the departments but is reported as a total for the entire operation. In a question regarding the proper combination of departments, the contribution margin rather than the net profit of each department is considered to be the important figure. *Thus, each department is judged by its ability to contribute a margin toward fixed cost and profit.* The major criticism of this presentation by most businessmen and accountants

FIGURE 2

Contribution Margin Income Statement By Departments

For The Year 195X

	Totals	*Department 1*	*Department 2*	*Department 3*
Sales	$100,000	$50,000	$30,000	$20,000
Variable Costs :				
Cost of Goods Sold	$ 80,000	$45,000	$25,000	$10,000
Selling Expenses	5,000	2,500	1,500	1,000
Total Variable Costs	$ 85,000	$47,500	$26,500	$11,000
Contribution Margin	$ 15,000	$ 2,500	$3,500	$ 9,000
Fixed Costs :				
Administrative Expenses	$ 6,000			
Net Profit	$ 9,000			

is that, in the long run, fixed costs must be covered and therefore deserve proper consideration. This criticism will be examined later in the article.

PROFIT-VOLUME ANALYSIS

The contribution margin approach, as outlined above, forms the basis for profit-volume analysis. This can best be described by discussing the profit-volume graph (Figure 3). As has been pointed out, the variable cost and the contribution margin per unit are assumed to be constant. The ratio of the contribution margin to the selling price is called the profit-volume ratio. This ratio, when expressed as a percentage and multiplied by the dollar sales, will give the total contribution margin at that particular level of sales.

In Figure 3, sales in dollars are plotted along the horizontal axis. The vertical axis is used to plot dollars of profit and loss and the fixed costs. Line Z represents the relationship between sales and profit when the fixed costs are $30 and the profit-volume ratio is 15%. The profit-volume ratio will be 15% if the unit of product sells for $1 and the variable costs of producing and selling the unit are 85 ¢ . With this set of data, the contribution margin per unit would be 15% (15/100).

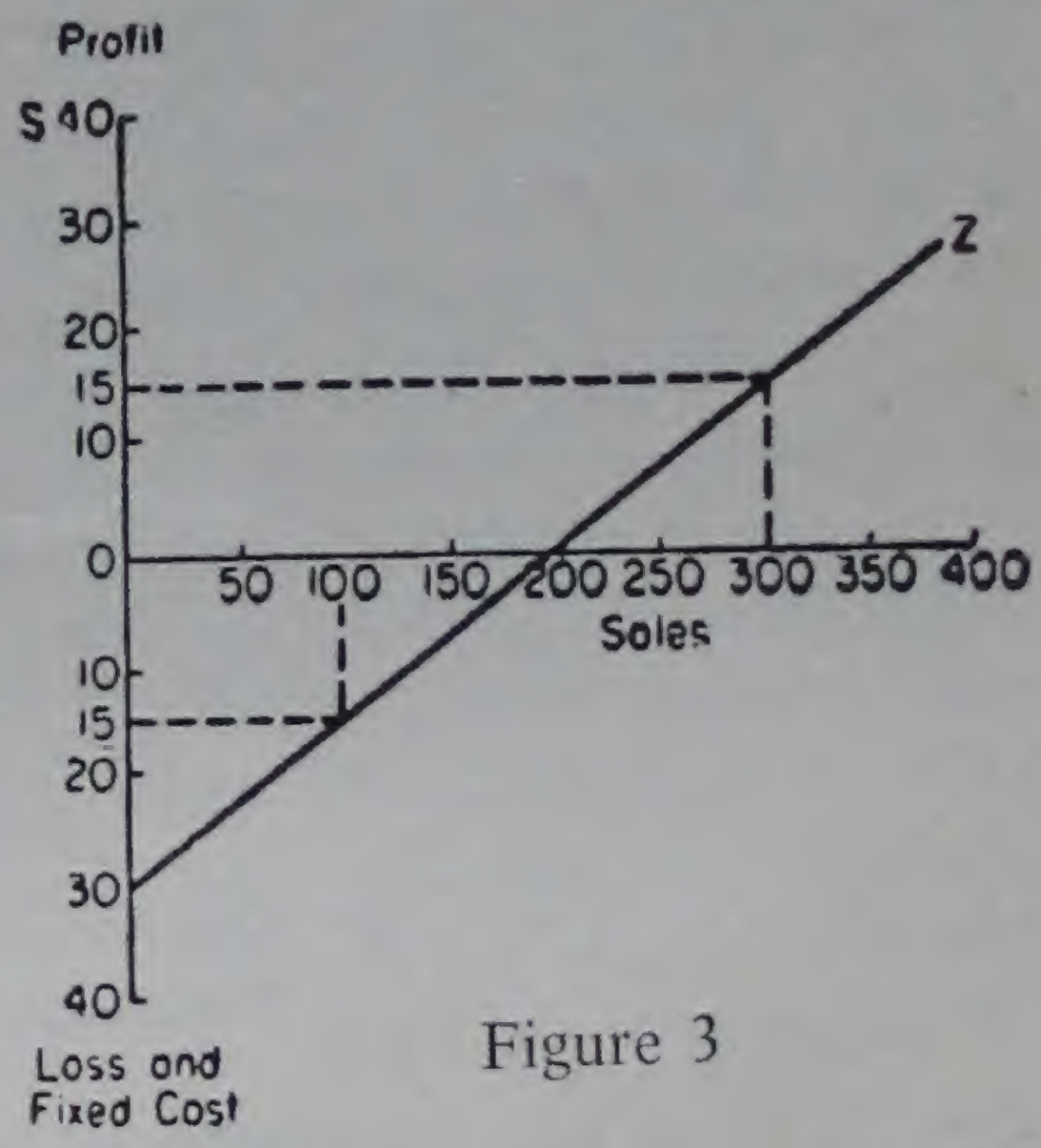


Figure 3

Profit and loss are read from the Y axis. For example, at sales of $300 the profit is $15; at sales of $100 the loss is $15; the loss at zero sales is $30, the amount of the fixed costs. The point at which line Z intersects the sales axis ($200) gives sales at the breakeven point: namely, the point of no profit or loss. Sales at the breakeven point can be computed by dividing the fixed costs by the profit-volume ratio. The explanation for this computation is as follows:

1. The profit-volume ratio gives the percentage of each sales dollar that can be used to cover fixed costs.
2. Breakeven sales give the level of sales at which fixed costs are covered: that is, the level of sales where the contribution margin is equal to the fixed costs.
3. Therefore, breakeven sales can be computed by dividing the fixed costs by the percentage of each sales dollar available to cover the fixed costs: namely, the profit-volume ratio.

ADVANTAGES OF PROFIT-VOLUME ANALYSIS

Profit-volume analysis has proved to be helpful in demonstrating the effects of a change in product-combinations. Therefore, it has been used primarily to report the effects of a change rather than to decide what the proper combi-

nation of products should be. The reporting advantages will be examined first, and the decision-making advantages will be discussed later.

Assume that a company sells two products, A and B, whose selling prices, variable costs, etc. are given below:

Product	*A*	*B*
Selling Price Per Unit	$10	$8
Variable Costs Per Unit	$ 7	$3
Contribution Margin Per Unit	$ 3	$5

Fixed costs in total--$40,000.

If the two products are sold in the ratio of 2 B to 1 A, the profit-volume ratio for the product "package" is computed as follows :

Sales		
1 A @ $10	$10	
2 B @ $ 8	16	$26
Variable Costs		
1 A @ $7	$ 7	
2 B @ $3	6	$13
Contribution Margin		$13

Profit-Volume Ratio : $13/$26 or 50%

For this sales mix, the profit-volume relationship is shown graphically (line X) in Figure 4. If the sales of the firm are currently $120,000 per year, profit is $20,000 provided the sales mix remains 2 to 1 in favor of product B. Assume, however, that during the following year the firm's sales increase to $140,000, but profit actually decreases because of a change in sales mix from 2 B to 1 A to 2 A to 1 B. Also, assume that everything else remains the same ; that is, there is no change in selling prices or costs. The new profit-volume ratio is computed below, and the new profit-volume relationship is shown graphically by line Y in Figure 4.

With fixed costs of $40,000, the new breakeven sales are $102,500 compared with $80,000 under the previous sales mix. Although actual sales have increased to $140,000, profit is decreased from $20,000 to $14,600 ($140,000 × 39%—$40,000). The decrease in profit is caused by a change in sales mix in favor of product A which has a lower profit-volume ratio than product B.

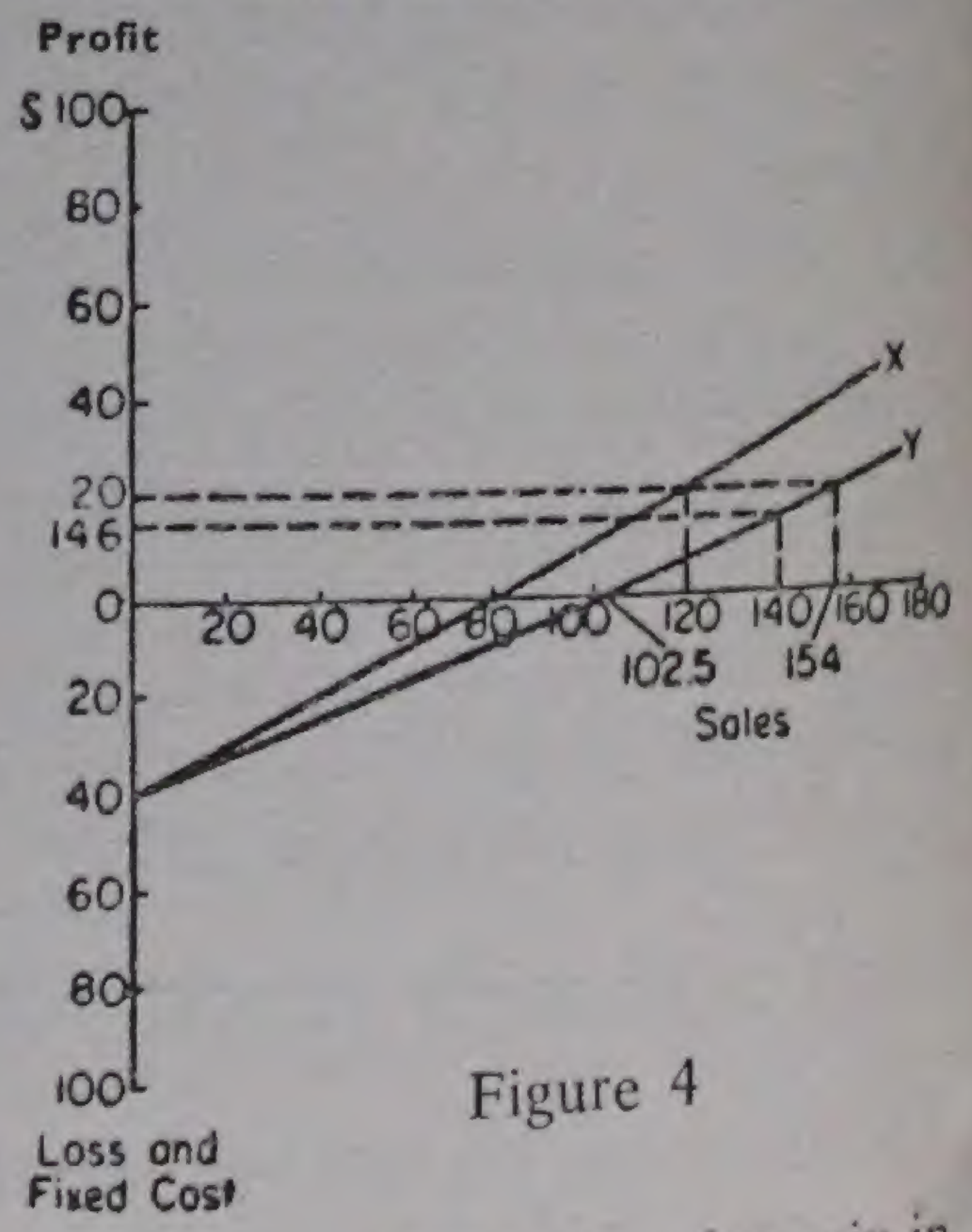


Figure 4

Sales		
2 A @ $10	$20	
1 B @ $ 8	8	$28
Variable Costs		
2 A @ $7	$14	
1 B @ $3	3	$17
Contribution Margin		$11

Profit-Volume Ratio : $11/$28 or 39%

The profit-volume graph illustrates this situation quite effectively. The decrease in the profit-volume ratio (for the new product package) is shown by a decrease in the slope of the profit line. Also, if the $20,000 profit line is extended to line Y, the level of sales necessary to produce the same absolute dollar profit under the new sales mix is shown to be about $154,000.

The primary advantage of the contribution-margin income statement and the profit-volume graph in reporting the results of operations stems from the regrouping of the variables which affect profit. In the conventional profit report, fixed costs are merged in several accounts while in profit-volume reporting the fixed costs are reported in total. In contribution margin reports, the selling price of the product, the variable costs, and the sales mix are considered as a package ; hence, all three variables must be considered in explaining profit changes. If profits change as the result of a change in the profit-volume ratio, the manager knows immediately which variables he must investigate in order to explain the change. Furthermore, he need not waste time looking at the level of the fixed costs ; if there is a change in fixed costs, it will be apparent immediately simply by glancing at the graph or the income statement.

DECISION-MAKING ADVANTAGES AND LIMITATIONS

The proponents of contribution-margin analysis claim various decision-making advantages for this tool. For example, it is pointed out that variable costs might be used in pricing the product particularly in a "dumping" situation. Some writers even say that variable costs may be used for regular pricing decisions if a markup is added which will cover a portion of the fixed costs and a satisfactory profit margin.

At this point, a storm of protest is usually forthcoming, primarily from businessmen who point out that the fixed costs must be considered in pricing the product. Many people view the allocation of fixed costs among the units as the only "safe" approach to cost-plus pricing. The fear is that if variable cost information is given to the sales personnel, the price actually quoted will gradually slip down so close to the variable cost that in the long run the sales revenue will not cover the fixed costs.

Turning now to product-combination decisions, what are the advantages and limitations of contribution-margin and profit-volume analysis? First of all, it must be recognized that the prices of the products are assumed to be given. Hence, the question is, with given prices, what product mix should be adopted? Actually, product-combination decisions are much broader than the above question indicates. When a firm is deciding whether to make or to buy a particular subassembly or part, the problem involved is essentially one of product-combinations. Furthermore, the entire realm of distribution or marketing decisions consists essentially of product-combination problems. For example, the question of the proper combination of sales territories or customer classes is very similar to the question of what combination of products should be produced and sold. The same general approach should be used for all of the above-mentioned problems. The desirability of a customer class, like the desirability of a shoe department, should be judged on the basis of its contribution to the over-all operation.

For illustrative purposes, the example given above will be used in the following discussion. The firm sells two products, A and B, whose prices are $10 and $8 whose variable costs are $7 and $3 respectively. If the contribution margin approach is used to determine the best combination of products, the fixed costs of $40,000 will not be allocated to the two products. Fixed costs, although necessary for the operation of the firm, will not change as a result of choosing various combinations of products. The decision to be made is one of choosing the best use of the firm's facilities. Those costs which do not change no matter what use is chosen are irrelevant.

For any given level of dollar sales, the best combination of products is that combination which will give the highest contribution margin. With this restriction on sales, the choice can be made by looking at the profit-volume ratio for each different sales mix. Thus, if sales are estimated at $200,000 for the coming year, the firm will make more profit if the sales mix is 2 to 1 in favor of product B than if the mix is 2 to 1 in favor of product A. The following calculation supports this conclusion:

Product Mix	*2 B-1 A*	*2 A-1 B*
Dollar Sales	$200,000	$200,000
Profit-Volume Ratio	50%	39%
Contribution Margin	$100,000	$ 78,000
Fixed Costs	$ 40,000	$ 40,000
Net Profit	$ 60,000	$ 38,000

However, if the sales restriction is dropped, it is not safe to conclude that 2 B for 1 A is a better combination of products than 2 A for 1 B. In other words, the problem of product mix cannot be solved in every situation by using only the profit-volume ratio.

If the products are examined individually the profit-volume ratio for A is 30% ($10-$7/$10) and for B is 62.5% ($8-$3/$8). It may appear, therefore, that product B is the most profitable product and thus should be pushed by the firm. However, such a conclusion overlooks one very important principle of profit maximization—in order to maximize profits the firm must maximize the rate of return with respect to *the scarce operating factor.* The contribution margin is the proper measure of the rate of return for each product, but a statement of the scarce factor is not a part of the contribution margin approach. Hence, the method is incomplete. More information is needed in order to use this approach in product-combination decisions.

Assume that the scarce factor in this case is production time; that is, the firm can sell more units of A or B than it can produce at the present level of capacity. In such a situation, even though product B has the highest contribution margin and profit-volume ratio, product A may still be the more profitable product. This may be the case if product A takes less production time than product B. For example, assume that it takes only 1 man-hour to produce a unit of A and 4 man-hours to produce a unit of B. If the capacity of the plant is 200,000 man-hours per year, profit would be maximized by producing only product A. The following calculation brings out this point:

Product	*A*	*B*
Units of Production Possible	200,000	50,000
Contribution Margin (200,000×$3)	$600,000	
(50,000×$5)		$250,000
Fixed Costs	$ 40,000	$ 40,000
Profit	$560,000	$210,000

In this example, the scarce factor is production time. Actually, the scarce or limiting factor depends on the situation. In choosing the size of departments within a department store, the scarce factor may be floor space or the necessary capital investment. Using the contribution margin as a measure of the rate of return, the pertinent computation is the contribution margin as related to the scarce factor, e.g. the contribution margin per hour of production time, per square foot of floor space, per dollar of capital invested, etc. In the above example, product A is more profitable than product B since the contribution margin per hour of production time is $3($3/1 hour) for product A and $1.25 ($5/4 hours) for product B.

The contribution-margin approach combined with a statement of the scarce factor of production is a useful approach for solving product-combination problems. The profitability of the unit can be judged by its rate of return as related to the scarce factor. To criticize the contribution margin approach because it overlooks fixed costs, as is sometimes done, is not justified. Instead, the criticism should be that this approach may be incomplete because of its failure to consider properly the scarce operating factor.

Actually, allocation of fixed costs to products *may* give an indication of the relative profitability of each of the products if the allocation is based on the scarce factor. For example, if the scarce factor is 200,000 man-hours of production time and the fixed costs are $200,000, a charge of $1 per hour might be allocated to each product. The relative profitability of the two products can be calculated as follows:

Product	*A*	*B*
Contribution Margin Per Unit	$3	$5
Hours of Production Time Per Unit	1	4
Fixed Cost Per Unit	$1	$4
Profit Per Unit	$2	$1

This solution does not hold in *every* case however; thus, this procedure may be very misleading. For example, when the fixed costs are only $40,000, the charge based on 200,000 man-hours is 20 ¢ per hour and product B appears more profitable than product A—$2.80 profit for A as compared with $4.20 for B. Hence, in this case the allocation of fixed costs leads to a wrong conclusion. The reason for allocating fixed costs is to convert the scarce factor to dollars. However, unless the fixed cost rate is sufficiently high, the procedure is invalid. The reason is that the value of an hour of production time depends on the contribution margin per hour of the respective products. There is no logical reason why the fixed costs per hour should be any indication of the value of an hour of production time.

The contribution-margin approach for choosing product-combinations may appear to be applicable only to short-run problems. This, however, is not the case. In the long run, the firm may face decisions which involve expansion of facilities. Such an expansion might involve additional capital investment and the question of what area or part of the firm should be expanded. For maximum profit, the department which should be given the additional floor space is the one which will give the highest contribution margin per additional square foot of floor space. Likewise, if the firm is choosing new sales territories as part of a market expansion program, the territory chosen first should be the one which will give the highest contribution margin as related to the scarce factor—which in this case might be capital invested or hours of salesman's time. Hence, the contribution-margin approach is useful not only for decisions regarding the best use of existing facilities but also for decisions involving an expansion of existing facilities.

CONCLUSIONS

In approaching the problem of product combinations, fixed costs should be ignored. Even if the fixed costs increase, the most profitable product mix

will not be changed. The pertinent information regarding each product, department, sales territory, customer class, etc. is the contribution margin. This requires a knowledge of selling prices and variable costs. However, it is also necessary to have a statement of the scarce operating factor. The profitability of each product can then be judged by relating the contribution margin to the scarce factor. The information required may be difficult to compute. It may be that the firm faces many alternatives, and an estimate of each may be required. However, a careful estimate of the pertinent information should give a better solution than various shortcut methods which use readily available but meaningless data.

23 / *Top Management's Stake in the Product Life Cycle*

ARCH PATTON

Most products have a life cycle. Knowledge of the stages in the cycle and the implications of each will help management to alter its strategies over time thereby obtaining greater profits.

It is relatively easy for top management to recognize the profit implications of price reductions, design changes, product obsolescence, and other of the more obvious competitive weapons where a particular product is concerned. But executives have been slower to grasp the importance of a product's position in its life cycle as a basis for planning the strategy of profitable product exploitation. Too often their attention is focused on day-to-day competitive situations, or company-wide problems, rather than on the opportunities to advantageously shape a product's destiny that result from trends inherent in its life cycle.

The life cycle of a product has many points of similarity with the human life cycle; the product is born, grows lustily, attains a dynamic maturity, then enters its declining years. Like the human, a product that has not built up its potential during the formative years is likely to be relatively unsuccessful in its maturity. And just as each of us must manage our financial resources during maturity to take advantage of opportunities or protect ourselves against adversity, so executives who control the destiny of a product must optimize their use of capital resources in the latter stages of the product life cycle.

There are critical differences between the product and the human life cycle. Every person has an average life expectancy—his allotted "three score years and ten". But the life expectancy of a product varies widely. When a dress designer creates the "sack" style, he probably expects that it will have little more than a year of life; the design of a Chippendale chair may be "good" for generations. Aspirin is still aspirin after 65 years, but jet-prop engines were virtually obsolete by the time they came off the drawing board.

Although man has fruitlessly sought the elixir that will extend his own span on this planet, product life cycles—or phases of the cycle—have been lengthened or shortened by a variety of causes. When patents on the tube-

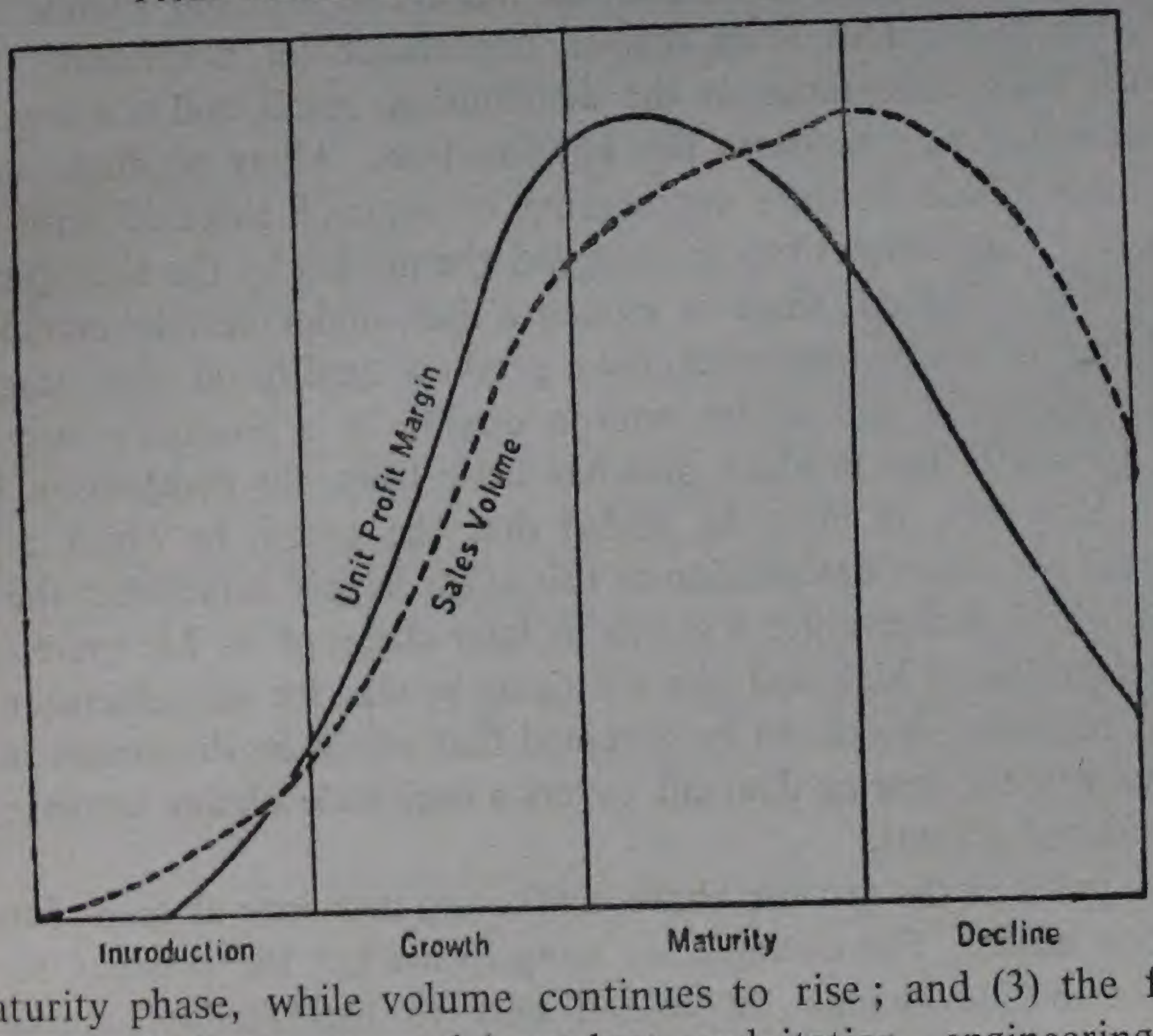
SOURCE: From *The Management Review*, a publication of the American Management Association, vol. 48, June, 1959, pp. 9-14, 67-71, Arch Patton. Principal and Director, McKinsey & Company, Inc.

less tire did not stand up in court, the product moved through the introductory and growth stages to maturity in less than four years. The automobile industry lengthened its maturity period immeasurably by what has come to be called "planned style obsolescence," which made automobilies a symbol of success rather than a means of transportation. (The auto industry's short-cycle model change based largely on styling has been tried in other industries with relatively less success. Perhaps if TV sets, refrigerators, and washing machines were parked in our driveways, the result might have been different).

THE LIFE CYCLE CONCEPT

Essentially, the product life cycle concept is a simple one. It has three key elements: (1) Products move through the cycle of introduction, growth, maturity, and decline at varying speeds; (2) unit profits climb sharply in the growth phase and start to decline because of competitive pressures during

Profit-Volume Relationships in the Product Life Cycle



the maturity phase, while volume continues to rise; and (3) the functional emphasis required for successful product exploitation—engineering and research, manufacturing, marketing, and financial control—changes from phase to phase in the cycle as shifts occur in the economics of profitability.

At the risk of oversimplifying the life cycle concept, the chart on this page gives a view of the profit and volume relationships occurring in each phase of the cycle. The losses of the early introductory phase give way to soaring unit profit margins during the growth phase. Profits turn down—while volume continues to expand—in maturity, and both slump during the decline, or obsolescence, phase.

These profit-volume shifts, in turn, lead to changes in the relative importance of the various functions within a company from phase to phase. This is probably best described by a brief review of the distinguishing environmental characteristics in each segment of the product life cycle.

The Introductory Phase

The critical ingredient here is research or engineering skill in product development. However, skill in testing and launching the product ranks high as a factor in its ultimate success. Many a "better mousetrap" never saw the light of day because consumers did not know which door to beat a path to. Normally, losses are heavy in this period, for volume is too small to yield profit in the face of high promotional costs.

The Growth Phase

The product having survived the introductory phase, the problem becomes one of getting a workable version on the market in sufficient volume to secure a brand franchise. This is of special importance for a consumer product, which must build acceptance at the distribution, retail, and consumer levels.

Thus manufacturing becomes the key function. Many products have died in the growth phase because engineering or research tinkered with product design so long that competitors pre-empted the market by the time production got under way. Indeed, there is evidence that, under certain market conditions, volume is more important than product quality at this stage. The consumer apparently will accept uneven quality in a product's early growth period if he wants the product and has little basis for comparison between products. However, it must be added that the extent to which a product provides real consumer satisfaction at this stage largely establishes the quality climate in which the product will live in later stages of its life cycle.

This is a period of high and sharply rising profits for manufacturer, distributor, and retailer. Risks can be accepted that would be disastrous in a more competitive era, for soaring demand covers a multitude of sins involving hasty or ill-considered actions.

At some point in the growth phase, marketing decisions of great future importance are made. For example, agreeing to market the product through a specific distribution channel, or to sell only to the "quality" market, may become important restrictions on product manœuverability in the next, or maturity, phase.

The Maturity Phase

As volume rises and the market becomes increasingly saturated, marketing steps to the center of the stage. Generally speaking, at this point all competitive products are reliable and there is less and less to choose between them. Improvements in the product tend to be small, with "selling features" or style changes dominant.

Profit margins begin to slip during this phase, despite rising volume. This results from each agency in the distribution process—starting with the retailer, moving back to the distributor, and finally reaching the manufacturer—giving up some profit in an effort to maintain or increase volume. This may take the form of one link in the chain absorbing costs that normally are borne by another (distributors handling credit and financing for retailers, maufacturers consigning stock to distributors), or taking over the functions of the other (as when manufacturers set up branches to replace distributors or retail outlets to bypass both distributors and retailers).

Often overlooked in assessing product distribution costs at this juncture are the costs *beyond* the manufacturer's sales force—the profit margins of distributors and retailers. These costs loom large in the total product cost, lie closest to the consumer, and are the first to feel a price squeeze. If the experience of recent years is any criterion, price pressure on a "mature" product at the manufacturer level lags behind retail and distributor price pressures. This tendency underlies the movement among manufacturers to "get closer to the consumer" by establishing branches or retail outlets. Such a step is designed to protect the factory profit by accepting a break-even, or loss, if necessary, at the branch or retail level to move the product in quantity.

Creative selling may develop whole new markets for the product in the maturity phase, despite apparent saturation of the market. Cigarette manufacturers opened the female market when the sales to male smokers approached saturation; and deodorant makers reversed this procedure by turning to the male market after saturating the female market.

The Decline Phase

As a product becomes increasingly mature, the pressure to reduce costs in each step of the engineering-manufacturing-distribution process mounts. This results from growing price competition, as the difference between competitive products is reduced to the vanishing point and increasingly sophisticated consumers evaluate price and quality more effectively in their buying. The advantages of the "old" product versus the attractiveness of the "new" products coming on the market also play a part in the consumer's assessment of product value at this point.

The need for controlling costs, which normally starts while volume is still rising, becomes a matter of survival as the product moves into the decline phase. The few manufacturers of street cars, steam locomotives, and windmills still in business are the last of a long list of competitors; they survived by withstanding price pressures of the decline phase longer than the others, or by developing other products.

The dominant role of marketing at product maturity gives way in the final phase of the product life cycle to the need for a coordinated control over all product costs: engineering, manufacturing, and marketing. The functional

emphasis in a product's decline—and in the late maturity phase--thus becomes one of "managing" product expenditures to optimize the return on each dollar of cost.

The product can no longer afford a marketing, or manufacturing, or engineering-oriented management. It cannot afford, for instance, to have the engineering department spend 90 per cent of its development budget on marginal improvements with little consumer attraction; or to have a manufacturing department "under run" a seasonal product 30 per cent to protect itself against being overstocked at the year end; or to have a sales department overestimate product requirements by 20 per cent to ensure prompt delivery.

Each of the above decisions (they actually occurred) appeared reasonable to the functionally oriented executives who made them, and, had the products involved been in the growth phase, the chances are good that these errors in judgment would have been buried under the rising tide of demand. However, each of the products faced the severe price pressures of late maturity, and company profits were sharply reduced by these unilateral decisions.

As the necessity for "managing" the exploitation of a product grows more acute, financial controls become increasingly important. So do the skill, resourcefulness, and courage of the financial executive. He becomes, in effect, the chief of staff to the executive with over-all profit responsibility, who alone has the authority to insist that functional executives develop a coordinated program to optimize product profitability.

So functional control comes full cycle in the decline phase. The executive with over-all responsibility saw to it that the product was successfully introduced; then he yielded a measure of influence to the manufacturing and marketing executive as the cycle unfolded, only to reassert his authority in the final phase.

SOME BIG QUESTIONS

There are those who believe that so many exceptions can be found to the product life cycle that it has questionable validity. They point out, for example, that many products of venerable vintage—such as steel, brick, coal, cement, bread, copper, shoes, and window glass—fluctuate with the economy rather than conforming to the traditional product life-cycle pattern. Similarly, a broad range of consumer and specialty items appears to be impervious to the normal life-cycle pressures. These include such products as drugs, patent medicines, branded packaged foods, printing presses, roller window shades, drill presses, saws, bicycles, and the like.

Some products appear to be less subject to price competition at maturity than others for reasons that are not always readily explainable. One segment of this fortunate group consists of relatively low-priced products with pleasure or health-giving properties that people have come to belive in—and have

little basis for judging. Products of this type are generally bought emotionally, frequently from habit or simply liking the product, as distinct from purchases that are made after a more or less judicious comparison of the merits of competing products.

The whole range of proprietary and ethical medicines, and certain proprietary specialties—Angostura Bitters and Hershey chocolate, for example—fall in this category. Another segment includes a large group of products that so dominate the market that their manufacturers are in a position to exercise great influence, if not actual control, over prices.

Durable consumer products, which are more subject to price competition than emotionally bought consumer items, appear to have certain life-cycle advantages over products bought by industry. These largely reflect the franchise that a refrigerator, or shoe, or furniture manufacturer has at both the retail and consumer level. The new producer of a durable consumer item (radio, refrigerator) faces the costly prospect of building brand acceptance among retailers and consumers, even with a vastly improved or new product. Industry's hard-headed purchasing agents, on the other hand, are willing to buy a new product—or drop an old one—in short order if the reason is demonstrable. With less emotion involved in the buying decision, the advantage of innovation is quickly lost in an industrial product. Imitators often are ready, willing, and able to copy a successful new development, and buyers will frequently accept the "copy" on the basis of relatively minor price, delivery, or service advantages.

Much of the doubt about the validity of the life-cycle concept appears to stem from two basic sources: the economics of the production-distribution process, and the definition of what constitutes a new product.

For instance, anthracite coal does not exhibit the price weaknesses associated with a product in its decline phase. Yet domestic output of anthracite has been cut 50 per cent during the past 15 years as a result of the competitive inroads made by oil and gas. The reason coal prices did not decline, of course, lies in rising union-controlled labor rates and the failure of a large number of marginal producers that were forced by declining volume to close down.

In other words, the fact that anthracite coal does not behave like a product in its decline phase results from a combination of economic factors that made it possible to maintain prices, despite a large drop in demand, by curtailing output. A similar economic balancing act seems to occur to many other commodity or commodity-type products in the decline phase.

A substantial number of products that do not follow the typical life-cycle pattern are protected by the economics of their production-distribution process. Patents, a limited number of producers willing to live and let live, heavy brand-advertising expenditures, and a dominant market share by a single producer—all help a product negate the facts of the life-cycle.

However, the most complex element to untangle in understanding the life-

cycle concept involves the question: What is a new product? For example, are stereo records a new product or simply an improved variation of the conventional monophonic record? How about the steam iron versus the dry iron? Or filter cigarettes versus the original nonfilters? Or fluorescent versus incandescent lamps? Or color television versus black and white TV?

The difficulty of determining under what conditions a new product moves into its own cycle and when it is a variation of an old product that merely fluctuates around the life-cycle of the "mother" product is a major factor in doubts regarding the product life-cycle.

There appear to be few universally recognized characteristics distinguishing the new product from an improved variation of an old one. Indeed, examination of a good many products indicates there may be several degrees of "newness".

1. *The unquestionably new product*—Stereo records show all the signs of a new product at introduction: high price, severe performance problems, spotty distribution, and the like. As another example, the transistor does certain things better than radio tubes, and at a lower cost.

2. *The partially new product*—The steam iron satisfies a consumer need—for dampening fabric—that the original dry iron cannot. However, the steam iron can do everything the dry iron does, hence competes as a general-use iron with the latter. Another example might be the portable radio, which does everything the table radio does and, in addition, can be readily carried about. The key here appears to be a product that extends the market, but also competes with the old product.

3. *The major product change*—Basic technological changes may yield a new product that becomes a mature product virtually overnight by simply replacing the old product. LP records and tubeless tires are cases in point. The principal manufacturers switched from the old to the new product so quickly that the new product had virtually no life-cycle of its own.

4. *The minor product change*—Power steering, remote-control TV tuning, and the like may give the product a short-term competitive edge, but they do not alter the life-cycle pattern of the product.

These examples indicate that a new product can reasonably be described in these terms:

> A new product is a product that opens up an entirely new market, replaces an existing product, or significantly broadens the market for an existing product.

Since there are many marginal situations where—even with the advantage of hindsight—it is difficult to distinguish the new product from the variations in an old one, there is obviously considerable risk of error in assessing the future of an existing product. For many years prior to the war, for example, telephone installations fluctuated with building construction and the economic cycle. The telephone showed every characteristic of a mature product during those

decades. Yet in the post-war years, telephone installations zoomed and far outstripped new construction.

Why? The answer lies in a change in the promotional philosophy of the telephone company after the war. The gaily colored phones, the advertising about the use of these phones in the den, kitchen, and so on, contributed to an upward push that renewed the growth pattern of what appeared to have become a mature product.

ECONOMIC FORCES AT WORK

Some industries have found it essential to *count on* relatively short life-cycles for their products. Ethical drug and packaged cereal manufacturers discovered that sales of new products normally enter a declining phase in three to five years. Therefore, if product-development programs are not planned around this short life-cycle, company profits become unrealistically high for a short period and then slump drastically.

A patent-protected product may stay in the high-margin growth phase for years after an unpatented item of identical vintage has been subjected to profit-slashing price competition in its maturity phase. When the Ronson lighter patents expired a few years ago, the product switched from what appeared to be its growth phase to a highly competitive maturity phase virtually overnight.

Fundamental economic forces are constantly at work changing the life-cycle pattern of products. For example, the farm market is in the process of a major shift from small operators who look at farming as a way of life to large farmer businessmen (and even farm corporations). Such a move is likely to mean that the distribution mechanism for selling the farm market will tend toward fewer and larger outlets. This, in turn, may well speed up the life-cycle of farm products as the more aggressive manufacturers sense the opportunity to gain an advantage by stepping up the tempo of marketing change and product development.

This would not be the first time that imaginative engineering has shortened the life-cycle of existing products by finding new approaches to better serve customers within industries facing basic changes in their profit climate. Not too many years ago the design of a printing press, or a steam generator, or a machine tool, or a paper-making machine changed relatively infrequently. Today, competitive engineering is forcing constant change in the life-cycle pattern of such products.

Studies of the product life-cycle face the problem that the four major phases of the cycle do not divide themselves into clean-cut compartments. At any given point in time, a product may appear to have attained maturity when actually it has merely reached a temporary plateau in the growth phase prior to its next big upsurge, or an economic recession can give a growth-destined product temporary symptoms of maturity. This means that it is

frequently difficult to judge with accuracy the phase of the cycle in which the product currently finds itself....

VALUE OF THE CONCEPT

Despite the many unanswered questions, the life-cycle concept has proved to be a sound planning tool when properly used. An appliance manufacturer was considering an expensive advertising and promotional campaign designed to create a "quality image" for its product. A survey showed that this particular appliance was in the late maturity phase of the life-cycle. Competition was keen, and the company's product had spotty distribution (rarely in "quality" outlets); it was considered a "price" item by retailers, and recent models had had serious performance deficiencies. If this product had been in the growth phase, attempting to change a "price" image into a "quality" image might have been practical. The fact that this product was in the maturity phase, however, argued that, in the short term, funds could be used to better advantage in other directions. The reason, of course, was that both the consumer and retailer image of this and competing products had "hardened". Any material change in this image would require a huge advertising and promotional expenditure over many years—and years were too long to wait for improvement.

Another manufacturer was considering eliminating wholly-owned branches in large cities because they were losing money. However, the product was a mature one, and field surveys indicated that gaining tight control of retail distribution in big cities was essential to maintaining volume. This pointed to the need for *more*, not fewer, branches, and led to a careful investigation of the whole distribution process. It was found that (1) company-owned branches had consistently captured a higher market share than the best independent distributors, (2) the *manufacturing profit* on branch volume easily offset branch losses, and (3) in spite of branch losses or break-even results, the company was generating substantially greater profits in branch markets than distributor markets having similar potentials—enough to make the return on large branch investments very attractive. In this case, a major decision was reversed because the life-cycle position of the product forced a more intensive study of the problem.

The life-cycle concept has been valuable in planning the future product exploitation strategy of many companies. For example, General Motors' early decision that a strong dealer organization was essential to its future success gave this company an important competitive edge as the automobile attained maturity. The decision of companies like Stewart-Warner, CBS, Raytheon, and Stromberg-Carlson to withdraw from television set production early in this product's maturity phase points to their recognition that life-cycle pressures were working against them.

On the other hand, many companies have made decisions damaging to

their product's position in the market, indicating that they did not fully understand the forces at work at various stages in the product's life-cycle. Servel decided to switch distribution of its gas refrigerators from local gas companies to the more typical distributor-dealer channels during the product's maturity phase. The loss of sales momentum at this critical juncture in the gas refrigerator's life-cycle is regarded as an important factor in the company's ultimate withdrawal from refrigerator production.

PROFITS AND PERSONNEL

To be sure, much remains to be learned about the economics of the product life-cycle. But studies to date have shown that two critical management areas are best understood in terms of this cycle : (1) product profitability, and (2) the personnel requirements of product management.

Product Profitability

The fact that product profits are greatly influenced by their life-cycle position points to the wisdom of taking this into account in product-exploitation strategy. Great risks can be taken in the growth phase. Indeed, time is so critical at this juncture that such risks often *must* be accepted. However, a careful husbanding of resources is essential in the later maturity phase, when profit margins are so low that losses become very difficult to recoup.

Underlying any discussion of the product life-cycle is the pressing need for management effort to insure the generation of new products to provide stability of company profits. This is particularly vital in industries where product life-cycles are characteristically short. The role of the research and development functions and the strategy of merger cannot be underestimated as elements in long-term profitability—or even survival.

Personnel Strategy

The perspective that the life-cycle concept provides top management in the development of executive personnel can greatly influence company profits. When General Motors chose Harlow Curtice as its chief executive in 1953, the directors' action undoubtedly reflected the maturity of the automobile itself and the need for a strong marketing executive.

The shifting of the functional job skills that are required in the several phases of the product life-cycle makes it possible for top management to assess future personnel needs with some accuracy. Research and engineering are the key in the introductory phase, manufacturing in the growth phase, marketing in the maturity phase, and financial and over-all management judgment in the decline phase.

However, since phases of individual product life-cycles are constantly changing and usually overlap phases of other products, there is evidence that a *balanced* group of functional executives is of prime importance. Companies

dominated by engineering, manufacturing, marketing, or financial executives seem to have problems in other phases of the cycle or in managing a group of products in different life-cycle stages. A fast growing chemical company, dominated by research-oriented executives, discovered to its surprise that several key products were in the late maturity phase and were not being effectively marketed. Top management considered theirs to be a "growth" business—which, in general, it was—but had not faced up to the problems of the mature products in their line.

The need for a balanced group of functional executives is attested to by the expanding product line of the average company. This means that more and more individual products are likely to be in different phases of the life-cycle at a given point. For example, the major TV producers also sell radios and high-fidelity equipment. Each of these products is in a different phase of the life-cycle: hi-fi is rapidly growing, TV is at maturity, and table radios are close to the decline phase. Thus each has different problems and opportunities and requires executives with somewhat different talents.

In the long run, since all products get older and the maturity and decline phases constitute the longest portion of the life-cycle, a growing demand for executives who can accept full profit responsibility is clearly forecast. How these men are to be identified and trained is one of the problems that many companies, with an eye on the life-cycle of their products, are wrestling with today.

24/*Design of the Marketing Program for a New Product*

G. T. BORCHERDT

Designing the marketing program for a new product is a profoundly important area in the life of any company. New product failures are extremely costly. The author of this article delineates specific factors to be considered in designing an integrated marketing program for a new plastic product.

Before getting into the aspects of designing a marketing program for a new product, I thought it might be well for me to give you a little background about the kind of business in which we are engaged in the Polychemicals Department of Du Pont. This may help you understand why I'll be somewhat vague in some areas that perhaps are of major concern to you, and on the other hand, appear to go overboard in considering some of the finer points related to our problems, not necessarily of great concern to you. I hope, however, that I adequately touch on the significant points because my main objective in this presentation is to relate them in a fashion that describes an integrated program.

Our Polychemicals Department manufactures and markets "Zerone" and "Zerex" anti-freeze, a wide range of agricultural chemicals and various bulk chemicals such as adipic acid, methyl alcohol, and ammonia. On the plastics side, we are heavily involved in the polythylene business, in fluorocarbon polymers, and a variety of nylon and acrylic plastics resins. We produce some semi-finished forms as well as finished forms of plastic products.

For this discussion I have chosen the plastics area for considering the design of a marketing program for a new product. I feel that here we can delineate specific factors in a very orderly and common-sense manner—and in addition we are dealing with what is now a profoundly important area in coming to grips with commercialization of new products.

In Figure 1 I have depicted in simplified form the sequential flow of materials as a plastic is produced, shipped to a customer for molding or shaping with the shaped object then following typical channels until it reaches its point of ultimate consumption or use. You will note that I have made a basic distinction between uses of the product that end up in producer equipment and those that are ingredients of consumer items. Depending upon the

SOURCE: From Robert L. Clewett (ed.), *Marketing's Role in Scientific Management* (Chicago : American Marketing Association, 1957), pp. 58-73, G.T. Borcherdt : Manager of Marketing Analysis Section, Polychemicals Department, E. I. Du Pont de Nemours and Co., Inc.

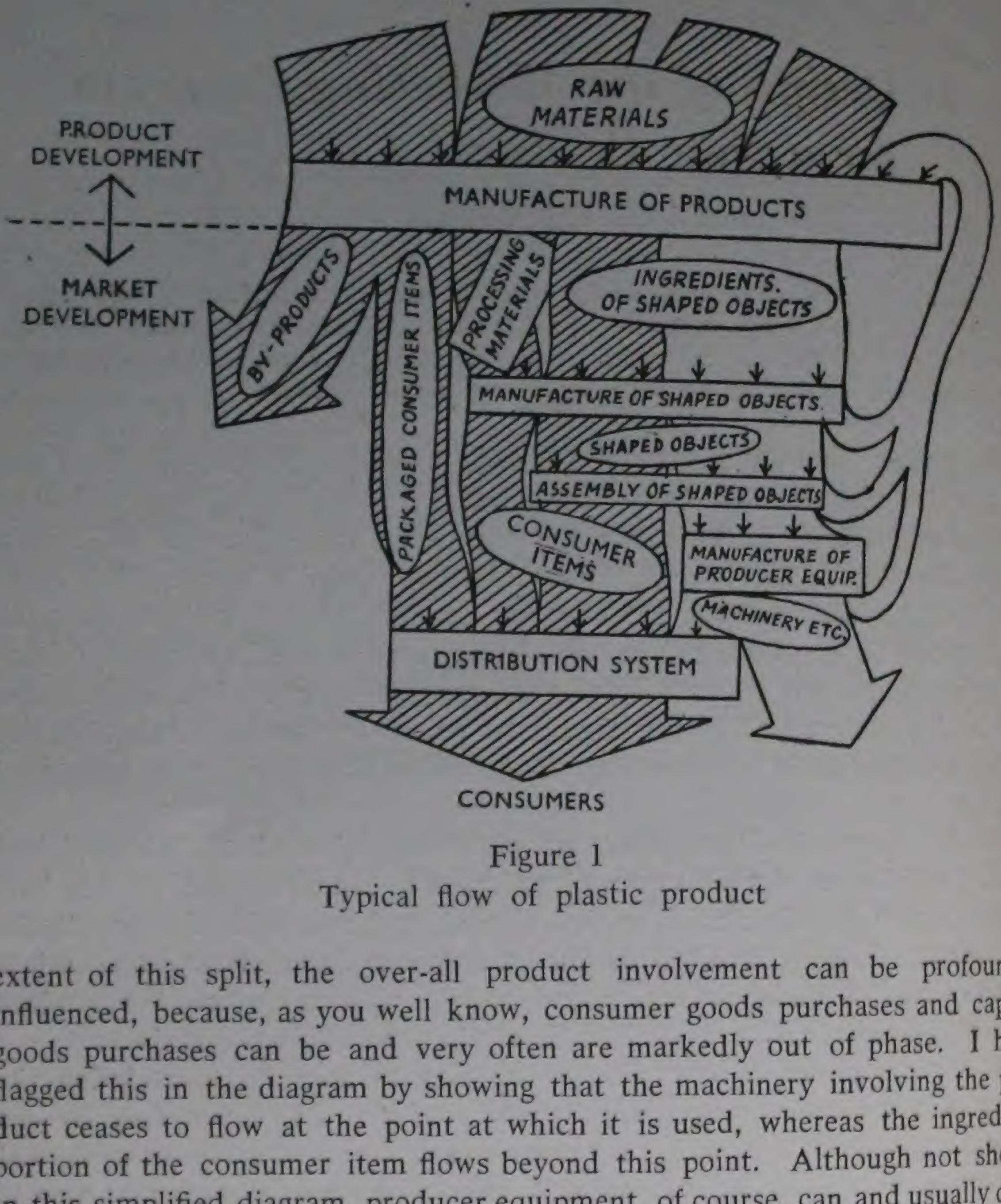


Figure 1
Typical flow of plastic product

extent of this split, the over-all product involvement can be profoundly influenced, because, as you well know, consumer goods purchases and capital goods purchases can be and very often are markedly out of phase. I have flagged this in the diagram by showing that the machinery involving the product ceases to flow at the point at which it is used, whereas the ingredient portion of the consumer item flows beyond this point. Although not shown in this simplified diagram, producer equipment, of course, can and usually does flow into the various other stages of manufacture. In this connection I have shown items produced by the customers, and their customers in turn, flowing back to the basic manufacturer of the product. This, I feel, can be a very important point to recognize inasmuch as valuable information can be obtained within your organization as to performance of items made from your products. You will find as I go along, that recognition of factors involved in the distribution through the stages indicated on this chart become principal points in my discussion, in particular the end-use factors involved. Also the factors shown on the left-hand side of the chart involving product development needs become important to recognize in the over-all design of the marketing program as these factors relate to the market development segment of the program.

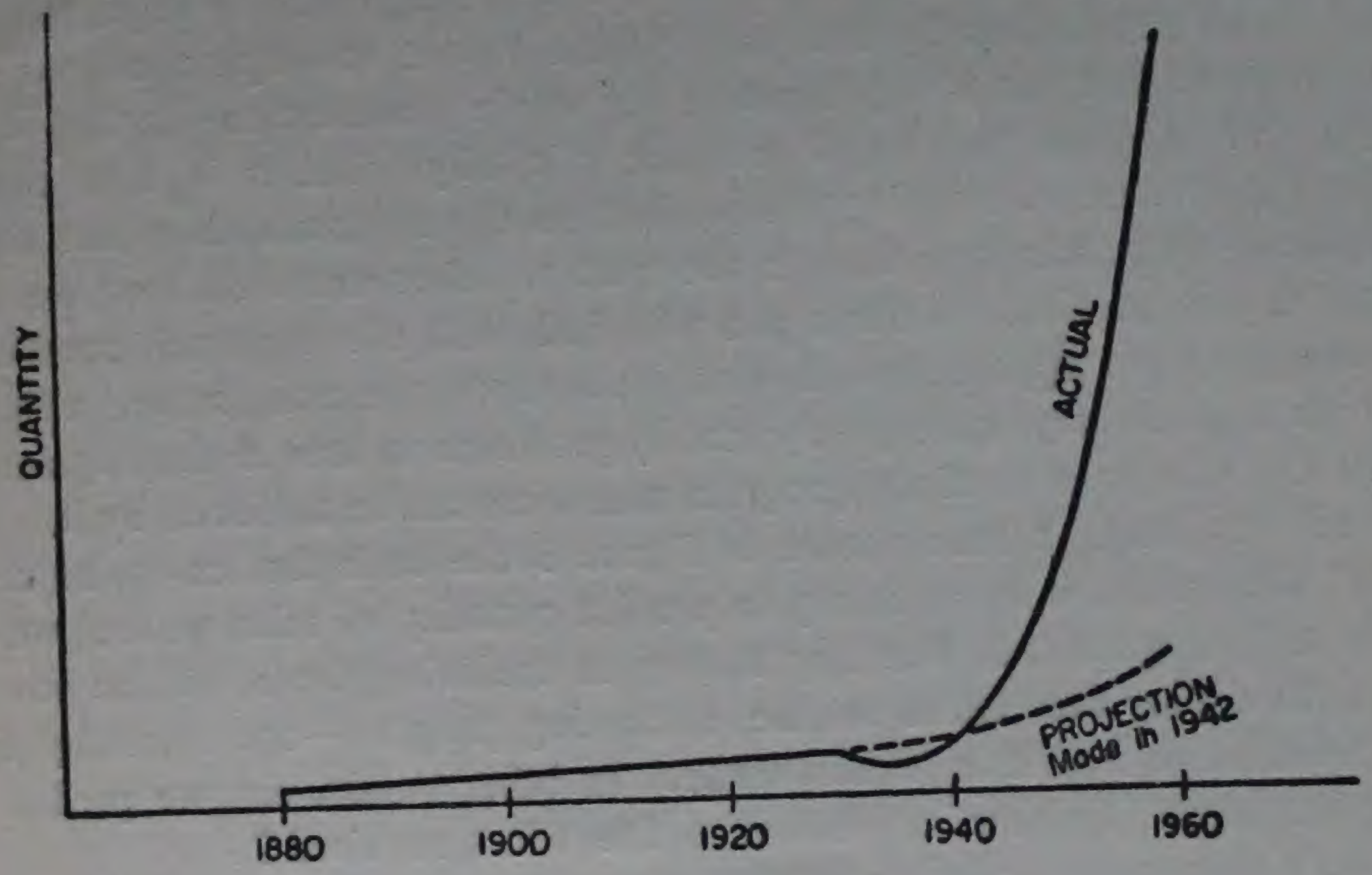


Figure 2

History of growth of plastic resin

Since I have selected a new plastic product for the discussion, let's take a look at what's been happening to plastics. Figure 2 shows the history of growth of plastics resins. This is an arithmetic scale in which the quantity in pounds for 1956 was a little over four billion and in dollars about two billion. Now, some pretty learned gents did a little projecting back in 1942,

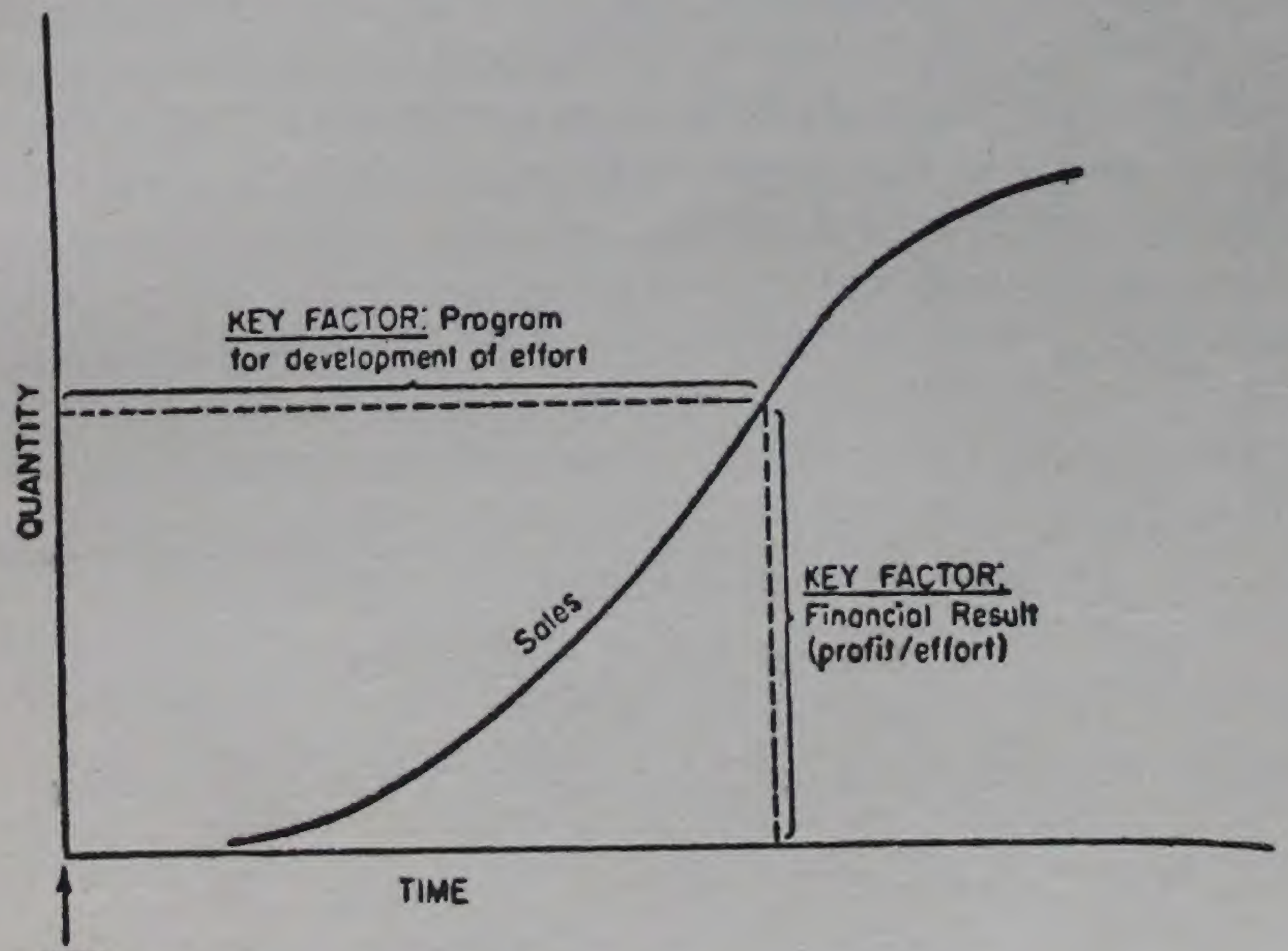


Figure 3

Base factors in design of marketing program for the new product

and look what they came up with. How wrong can you be by relying on historical trend projections? The point which I want to emphasize here—and as a matter of fact this is the heart of my whole presentation—is that in designing our program we must consider primarily what it is that can be achieved as a result of bringing this product on the market, rather than simply transcribing what has happened in the past to other materials that we have chosen to call plastics. I think you will find that the approach constitutes fundamentally the application of straightforward common sense, although there are undoubtedly some pretty knotty problems to face in development of the various components of the program and what can be achieved by it.

To set the stage, I have shown in Figure 3 the basic factors to be considered. Obviously, it is necessary to predict quantity of sales we feel we can realize as time goes on. The key factors in achieving these will be how we expect to deploy our effort in the marketing program—and resulting from this, whether or not it is worth while. In other words, can we predict an attractive profit position in relation to the effort required?

... Let's assume we have a candidate new plastic resin and tackle the job of setting the stage for decision on commercialization. Naturally, the first question we ask as the new plastic emerges from the test tube is "what's it good for?" So, in Figure 4, I've shown a quantity bar which describes, and

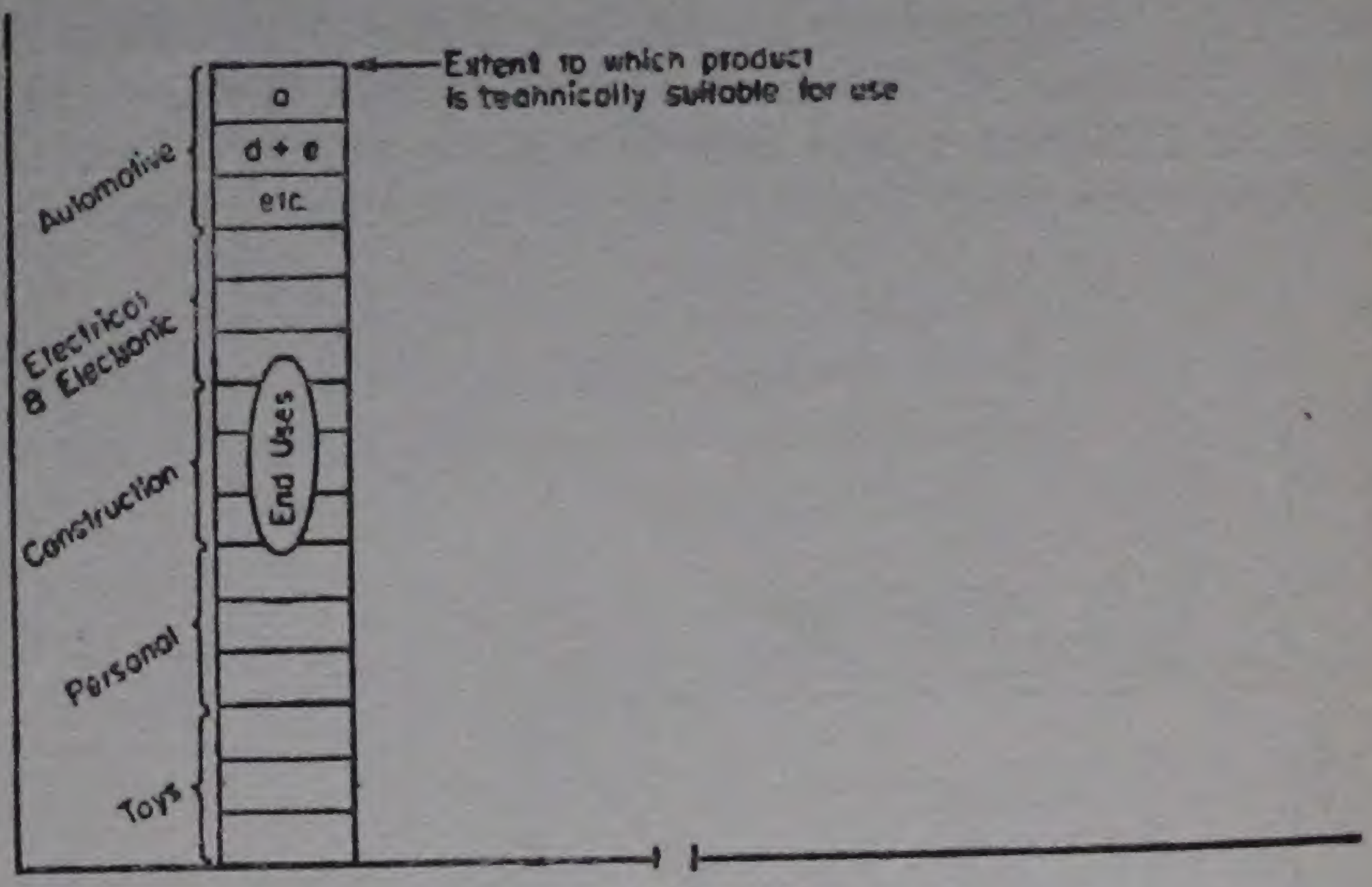


Figure 4
Size of market possibilities

I emphasize the word "describes," the extent to which the product is technically suitable for use. Or more simply, what can you make out of it and how much would be required if you made these things out of it? In doing this we must consider specific end-uses, and since we are considering whether or not it is worthwhile to commercialize the product, the size of the markets for these end-uses must be built up. Since our tools for doing this are

statistical data available from government and trade association sources and the like, it is inevitable that a first broad cut will fall into typical industry categories of the type I have shown on the left-hand side of the bar. Now, of course, if we don't build up much of a bar here, it is unlikely that we should be faced with designing a marketing program.

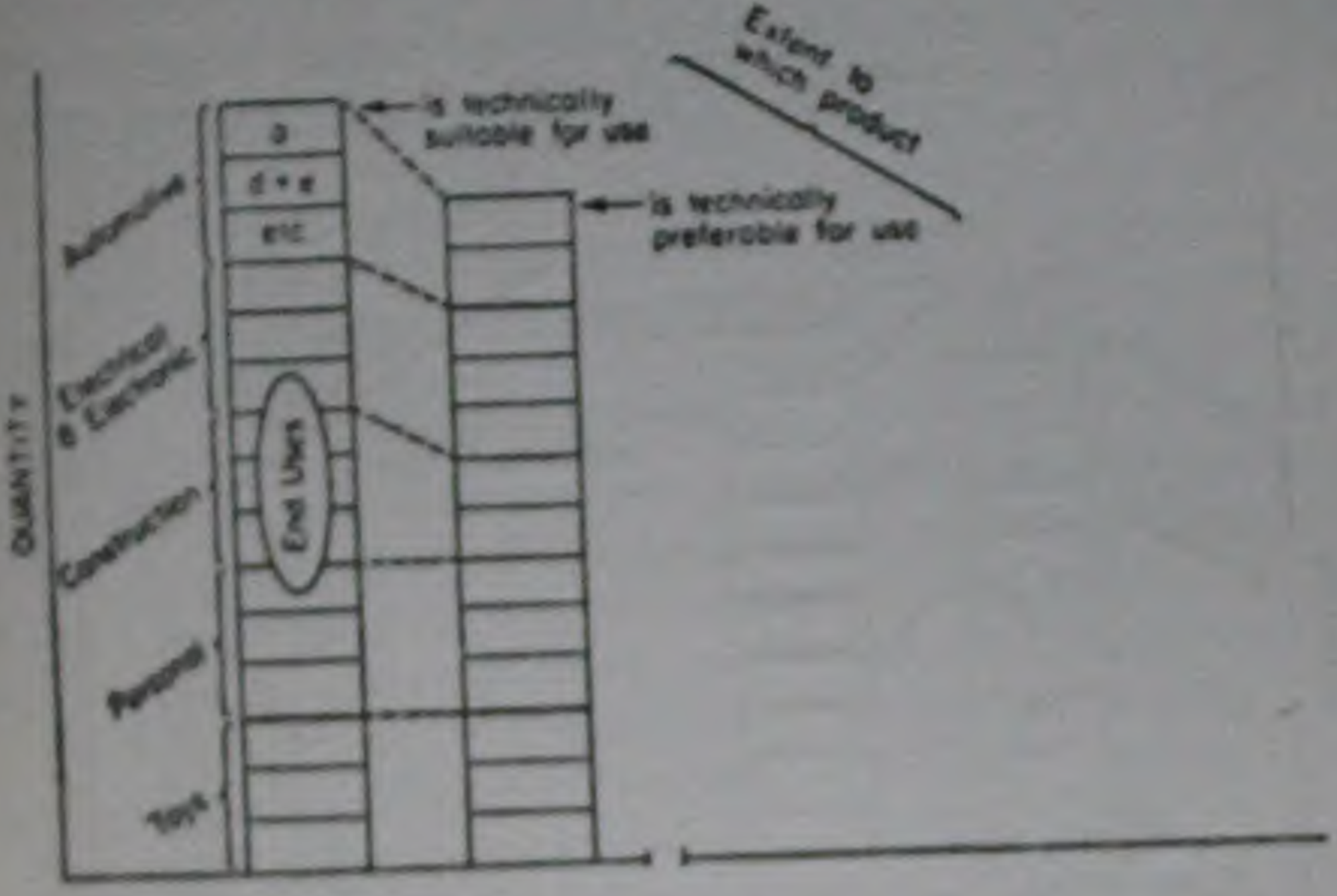


Figure 5
Size of market possibilities

We are undoubtedly going to be competing in many of the end-use areas with other materials either now being used or, though not yet on the market, also technically suitable. And so, we immediately start matching this new product against these other materials to judge where the new product will do a better job. In Figure 5 I have added, therefore, a second bar depicting the extent to which the product is technically preferable for use. Now I want to emphasize at this point that we have not yet come to grips with the costs associated with the use of the product. We're just trying to find out where, because of its end-use properties, it will do the best job. You will notice I've dropped out some of the end-uses in two areas, the automotive and the construction areas, as a possible typical situation faced with a new plastic resin. Thus, it may be possible to use it for a structural part, but if you really had your choice, and cost was not a factor, you would prefer to stick with steel or concrete, or possibly even wood. Now, I think this second bar with the data backing it up is a pretty important piece of information to have around. It is an important guide to indicate incentive for doing research and development to overcome cost barriers involved in the use of the product. It tells you what could be fair game for sales efforts in the event that you could do something about costs.

But we haven't considered costs yet and we still have a way to go in making

up our minds as to what we should be able to do in the way of sales if we commercialize this product. So, let's take a next step and consider the impact of selling price on the size of these market possibilities.

In Figure 6 I have added to the picture the market size depicting the extent to which the product should be used over a selling price range. Here is where the problem really gets complex because you will remember from the first figure that a plastic resin can go through several stages of fabrication before its real value as a potential end-product has been assessed. Basically

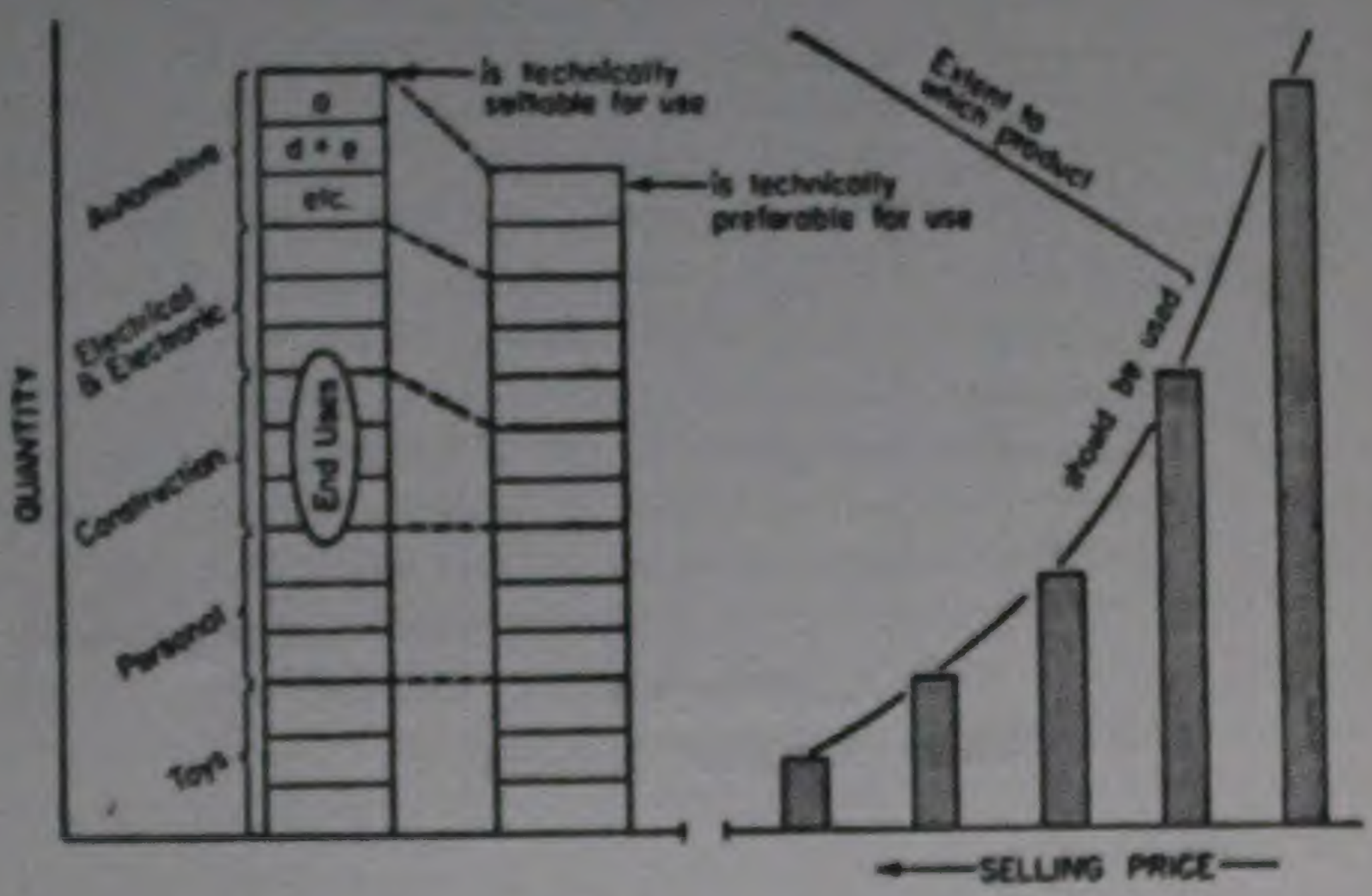


Figure 6
Size of market possibilities

the economic aspects of utilizing this material must be built into the overall picture in order to build the bars of "should be used" over the "selling price" range. The bar to the far right is, of course, equal to the far left bar, since at a sufficiently low selling price the product should be used wherever it is technically suitable for use.

Now, at this point I want to emphasize that in no way do these quantities representing size of market possibilities tell us how much we can expect to sell. We still have quite a way to go before we are ready to tell our management how much we expect to be able to sell. These quantities, documented by the data used in their development, basically provide us with a tool—and possibly one of the most basic tools—to start consideration of the design of the program with its attendant expected sales result. In the next series of figures, I am going to try to depict the basic framework in which this information behind the "should be used" bars fits with respect to the consideration of various alternative courses that we could take.

In the first figure of this series (Figure 7) I have switched around the ordinates of the last figure showing the line of the "should be used" against "selling price" with selling price on the vertical and volume on the horizontal ordinates.

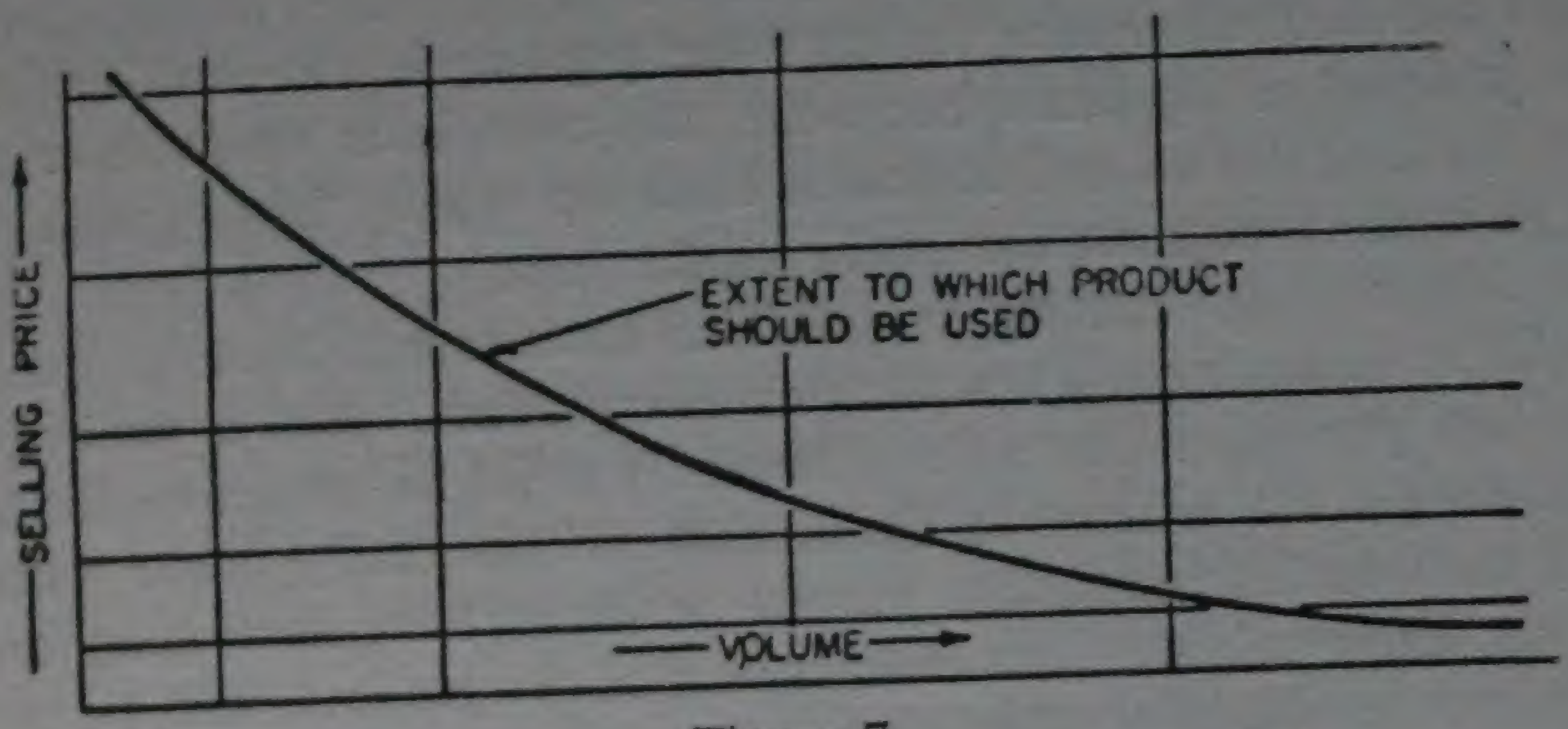


Figure 7
Framework of market possibilities

In Figure 8, I've detailed the end-use market pattern by the various market areas associated with the built-up volume. Thus, at a high selling price we may have a single use in the automotive area and perhaps a couple of end uses in the electrical and electronics area where the specific properties of this new product have high economic value. Particularly in the

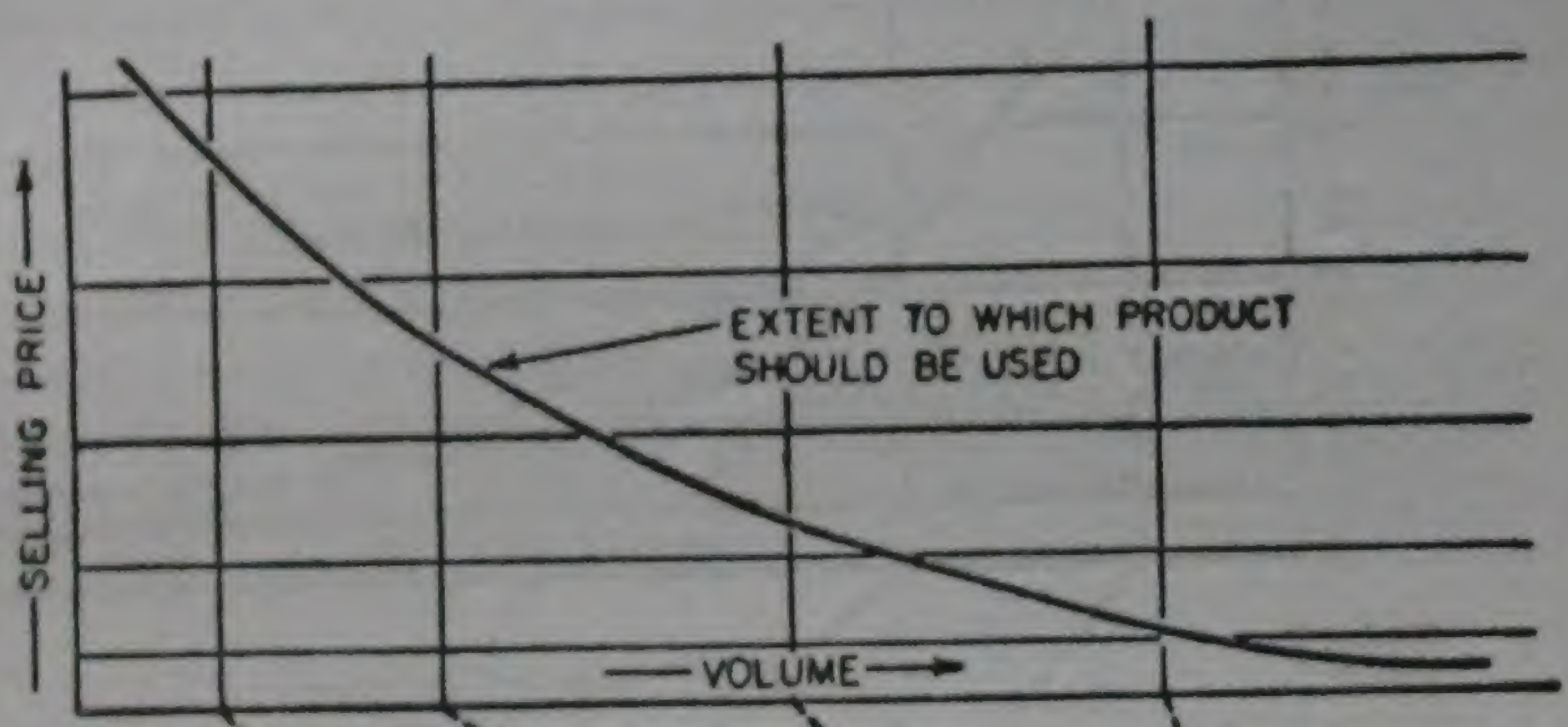
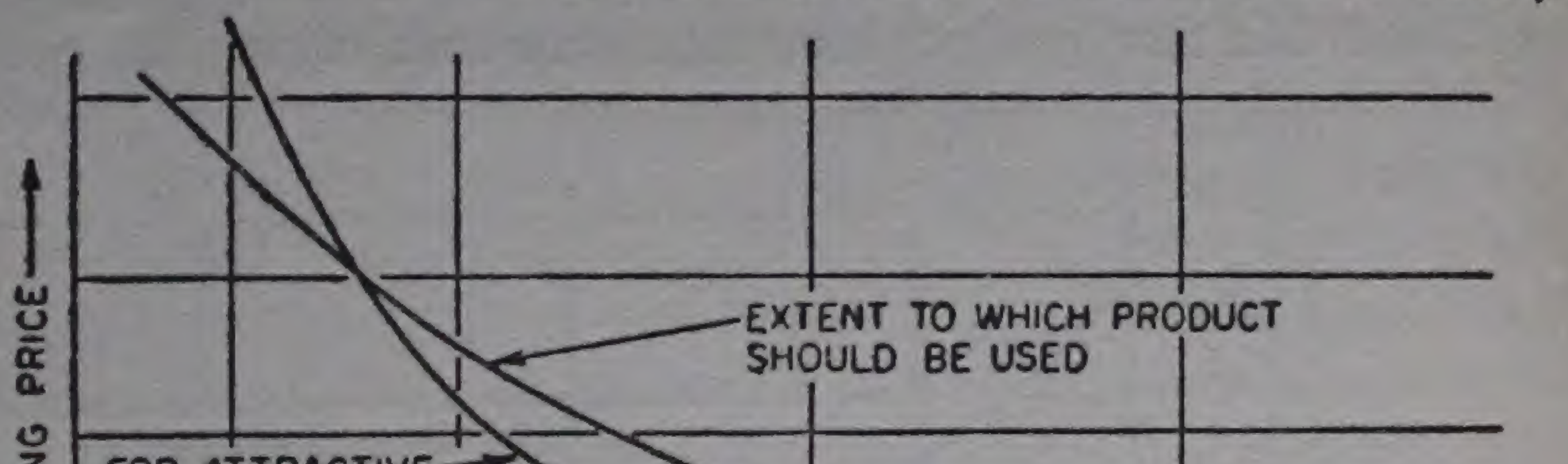


Figure 8
Framework of market possibilities

construction, personal, and toy areas other competitive products beat out our new product if it must sell at a relatively high price. But as we go down in testing the effect of selling price, D and E uses, or use areas, come in addition to the A, B, and C areas. Nothing more emerges from the electrical and electronics area, but an F use pops up in the construction area. Still no personal or toy items, but these later come in as we go down to relatively low selling prices, and of course build up rapidly to very high volume levels, perhaps throughout the entire market area.

Now, I feel we are starting to recognize some factors basic to the design of a possible marketing program for this new product. But, as yet I've shown nothing that gives us a clue as to whether it could be attractive for us as a producer to put the product on the market. Undoubtedly, while we've been building this market possibility picture we have been developing cost and investment information on the manufacture of the product, and we probably have a pretty good idea of what it's going to cost us to manufacture it. Moreover, it is likely that the unit costs and unit investments in production facilities will be quite sensitive to scale, particularly at the early stages of volume growth.

In Figure 9 I have added the typical line relating volume of production to selling price for an attractive profit position for the producer of the plastic resin. As indicated, this figure depicts a region of mutual incentive when you



Market Areas	END-USE/MARKET PATTERN				
Automotive	o	+ d, e	+ g, h, i	+ o	xxx
Elect & Electr.	b, c	–	j, k, l, m	–	xx
Construction	–	f	End Uses	+ p, q	xx
Personal	–	–	n	+ r	xxxx
Toys	–	–	–	s	xxxx

Figure 9
Framework of market possibilities and area of mutual incentive
(producer vis-a-vis user)

relate the line showing the extent to which the product should be used in the market with the attractive profit position line. In graphic form, it depicts whether or not there is likely to be mutual incentive on the part of potential users of the product and on the part of the producer for commercialization. If these lines don't cross, it seems quite unlikely there is any sound economic reason for putting the product on the market.

Perhaps you can now see my reason for associating the lower portion of the chart on end-use market pattern with this selling-price volume picture. We immediately begin to get some clues as to the nature and kinds of end uses on which we can put marketing effort and expect enthusiastic response in the market areas, depending upon our pricing plans. Of perhaps greatest importance, it indicates the order in which we will promote uses with the recognition of planting the seeds for future promotions as selling prices may trend down with increased volume of production. However, bringing this up at this stage is really premature because we have not yet come to grips with deciding what our sales volume can be in the face of these opportunities, and whether or not we can capitalize on them will depend upon the effectiveness we can achieve in a marketing program.

Referring again to Figure 3, we must put together the program for deployment of effort in terms of cost in relation to the profit to be realized by achieving sales. Another way of putting it, shown on Figure 10, is that if we start a marketing program we must, within an acceptable time, reach the

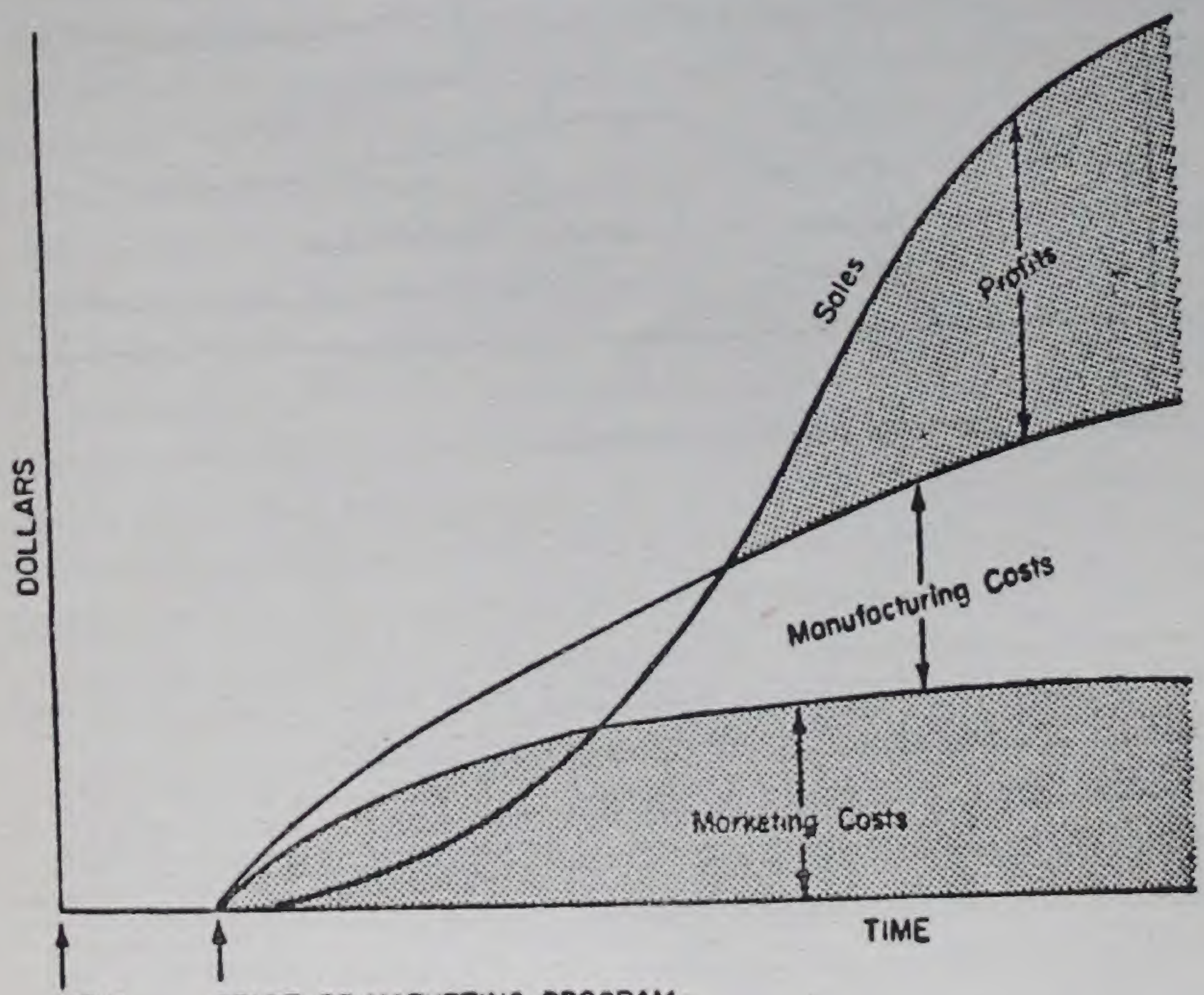


Figure 10
Sales versus cost

point at which sales dollars are sufficient to cover our marketing costs, our manufacturing costs, and provide us with an acceptable profit. I have shaded the profit area and the marketing cost area as they are the key points in today's discussion. Arriving at manufacturing costs is usually straightforward, and we are likely to know these within acceptable limits.

I've said nothing yet about forecasting our sales. Actually, we still are not in shape to forecast. There are likely to be more market possibilities than we can possibly go after within the limitations of our marketing facilities. Consequently, we must select from the alternatives facing us. It behooves us to consider very carefully the costs of attempting to develop the various markets, if we are to select the most attractive approach. Accordingly, on Figure 11, I've translated the previous figure into one depicting profit/effort relationship showing typical components of a marketing program for a plastic

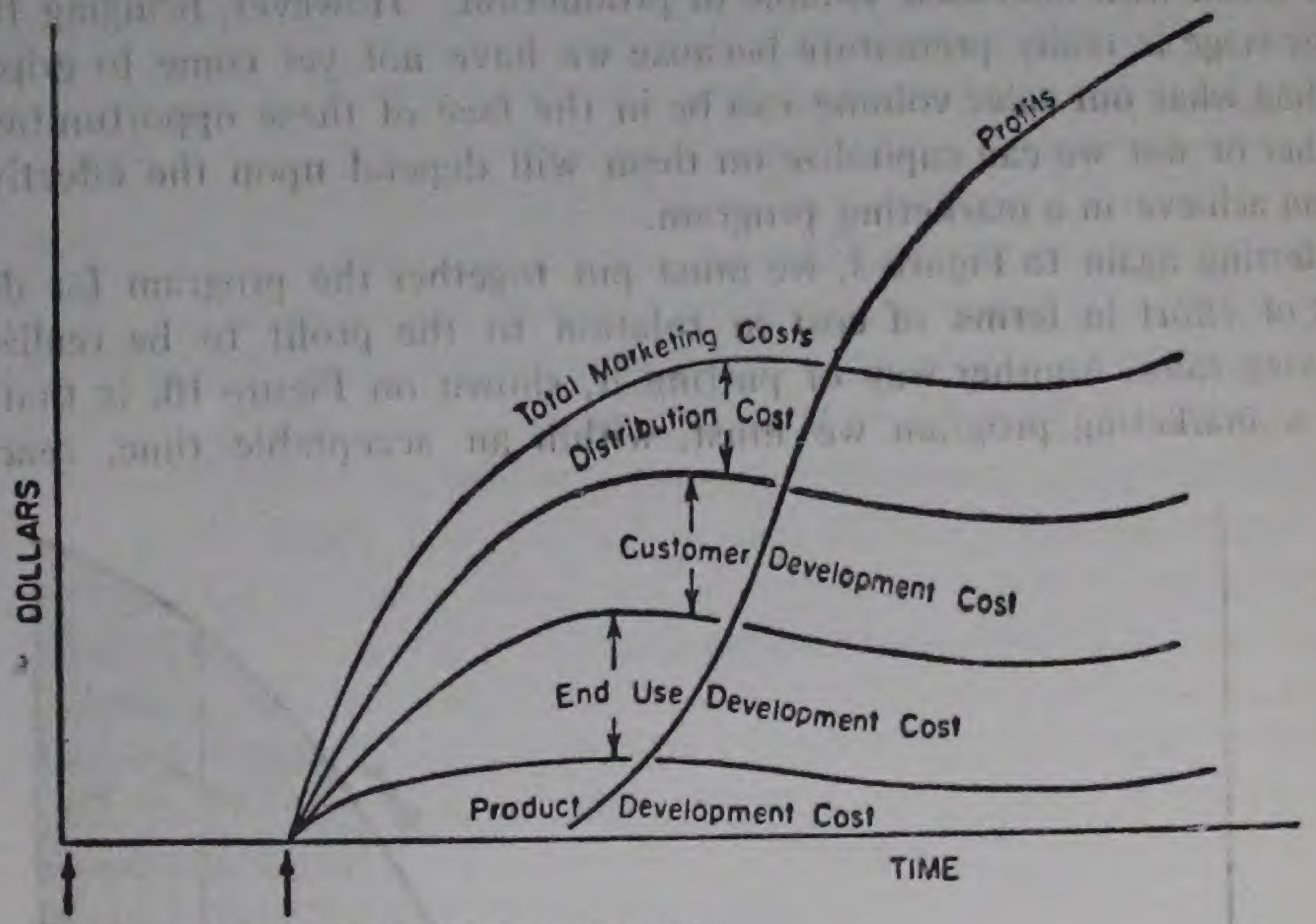


Figure 11
Profit/effort

resin, which add up to a total marketing cost which must be related to the total profits derived from sales volume achievable.

Considering the components of the marketing costs, we will, in the event we commercialize, undoubtedly have continuing costs associated with research on improving and modifying the product. I have indicated this on the figure as product development cost. There will be costs connected with working out ways in which to fabricate the end-use items. This is inevitable, even though we may not be making the actual end-use item ourselves. Our salesmen will be working with the customers, such as molders and extruders,

whose customers may be assemblers, as indicated on my first chart. Thus, there will be what I've called here customer development costs. There will also be distribution costs. Obviously, there can be wide variations in the compositions and costs of these individual components depending upon the particular end-uses involved and how we choose to engage in the market. For example, our immediate customers for a bag of molding powder may, in a captive sense, carry right through to the end-use area in some uses, and we, therefore, may have very minor costs involved in end-use development with some uses. In some areas a great deal of work may be required in this end-use area, with our immediate customers merely picking this up with very little effort on their part. Or, if the end-uses are predominantly in areas where a significantly new distribution approach must be involved, perhaps even to the extent that we have to be organized to handle distribution, this area may be of particular importance. Plastic pipe is an example here, where, if we elect to manufacture and distribute pipe and are not already in the pipe business, we will have real additional distribution costs. My point is that the specific end-uses must be studied individually and the profit to result must be related to the efforts required in order to decide on our marketing program. Inevitably we will find that there are possibilities for selling the product, some of which might be quite substantial in volume, but in which there is not a very attractive profit-effort relationship, at least for early market development.

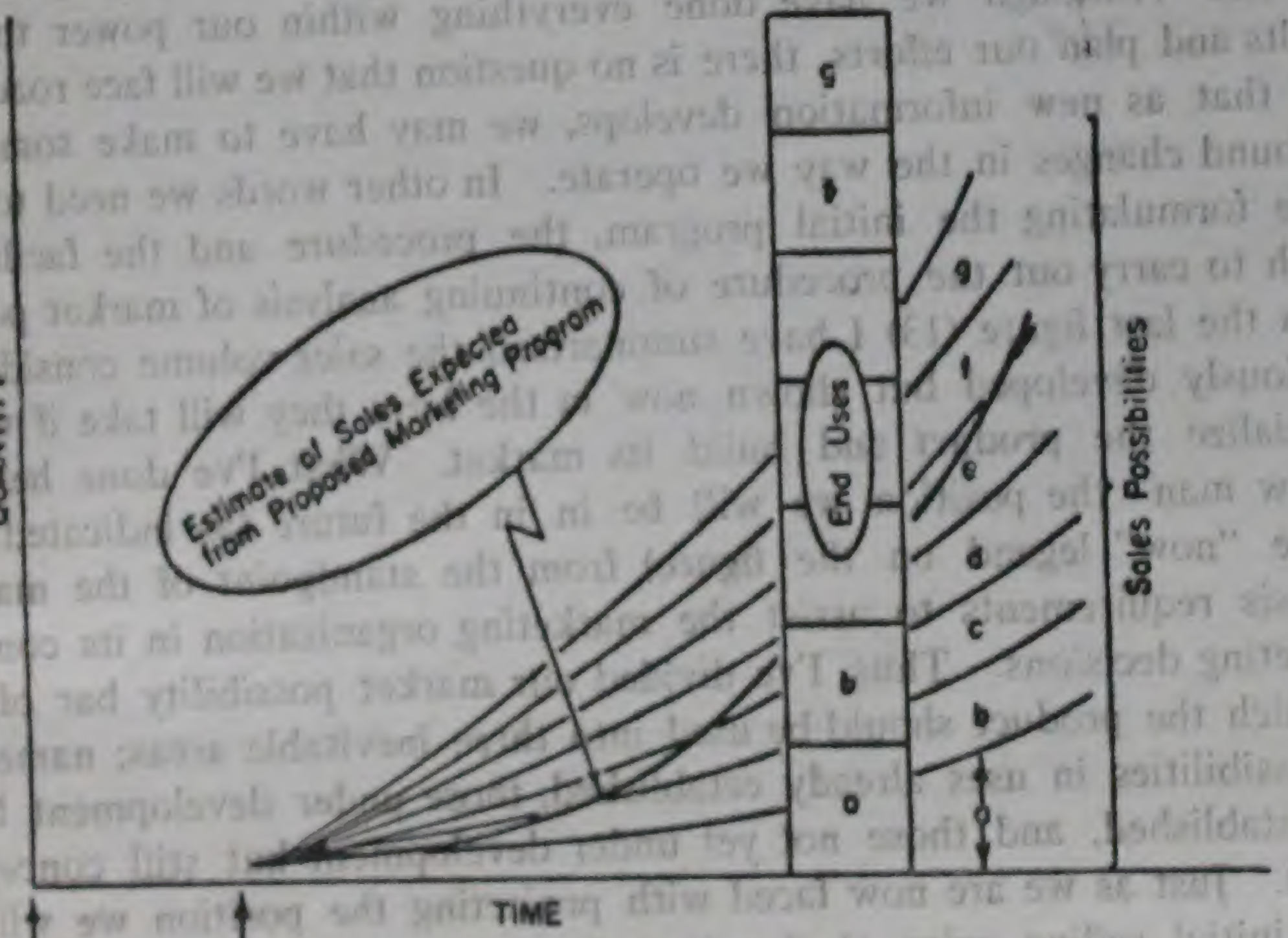


Figure 12
Projected sales result

So, let's assume that we have really "cased the joint"—looked over the various alternatives for sales possibilities—and have decided within the individual areas what we could accomplish if we went out to develop these areas. On Figure 12 I have put together these data from the standpoint of volume, where the bar shows the market possibilities—that is, the extent to which the product should be used at the initial selling price. The faint segments of the stacked line chart indicate, in an accumulative fashion, what we believe we can accomplish as time goes on in each of these end-use areas to give an over-all framework of total sales possibilities. Then, through a selection of the most attractive ones from the standpoint of profit in relation to effort, we have finally arrived at an estimate of the sales that we believe we can realize from our proposed marketing program involving the various components of product development, end-use development, etc. Finally, we have made a forecast—but you'll notice I've previously called it an estimate of sales. It can only become a forecast upon decision to commercialize.

Well, that covers a lot of territory and obviously a great deal of soul searching and rather precise considerations. We have a marketing program to propose to our management with the sales volumes to be expected and the profits to be expected. At first glance, it looks like our job is done, but I would like to bring up one further point which I feel is very important to recognize and build into the initial marketing program for this new product. The cost of doing it must be a component of the over-all marketing costs predicted. This is that we had better be sure that we have built into our program the procedure for a continuing evaluation of the progress of the venture. Although we have done everything within our power to predict results and plan our efforts, there is no question that we will face road blocks, and that as new information develops, we may have to make some rather profound changes in the way we operate. In other words we need to project while formulating the initial program, the procedure and the facility with which to carry out the procedure of continuing analysis of market position.

On the last figure (13) I have summarized the sales volume considerations previously developed but shown now in the form they will take if we commercialize the product and build its market. What I've done here is to "straw man" the position we will be in in the future (as indicated by the future "now" legend on the figure) from the standpoint of the marketing analysis requirements to assist the marketing organization in its continuing marketing decisions. Thus, I've divided our market possibility bar of extent to which the product should be used into three inevitable areas; namely, size of possibilities in uses already established, those under development but not yet established, and those not yet under development but still conceptually sound. Just as we are now faced with projecting the position we will be in as to initial selling price at the time of commercialization, we will at this future "now" time be faced with projecting a future market possibility at a possible lower price as scale of production may increase, and so the bar at

the right of the figure indicates this situation. I have flagged again the total of sales possibilities in light of these market possibilities, and have assumed we're up to date on the attractive areas to go after, and therefore, have put in the estimates of sales expected.

Now, you may ask why bother to show this future position requirement for analysis at the time we're designing the initial program? My reason is this—any continuing program on a new plastic resin comprises deployment of field salesmen to extend sales in established uses, the deployment of development technologists to get new markets started and, inevitably, the involvement of research and development technologists to test ideas and concepts for market soundness. And so, the opportunities to which these three stages of development are cued are separated in my figure. Of course, to be able to do this we must build into our marketing program an analysis procedure which will give us adequate knowledge of the stages of the end-use developments—and we'd better have it, with its costs, built right into our initial design.

I hope I've been able to lead you through my maze. Quite obviously what I have shown is a marketing analysis. Also, quite obviously, no single organizational segment of a marketing team can do the entire job. A variety of skills and experiences are required. In fact, what I have attempted to depict is the result of the entire marketing team's deliberations. Much of the factual market data can be developed by staff marketing research or market-

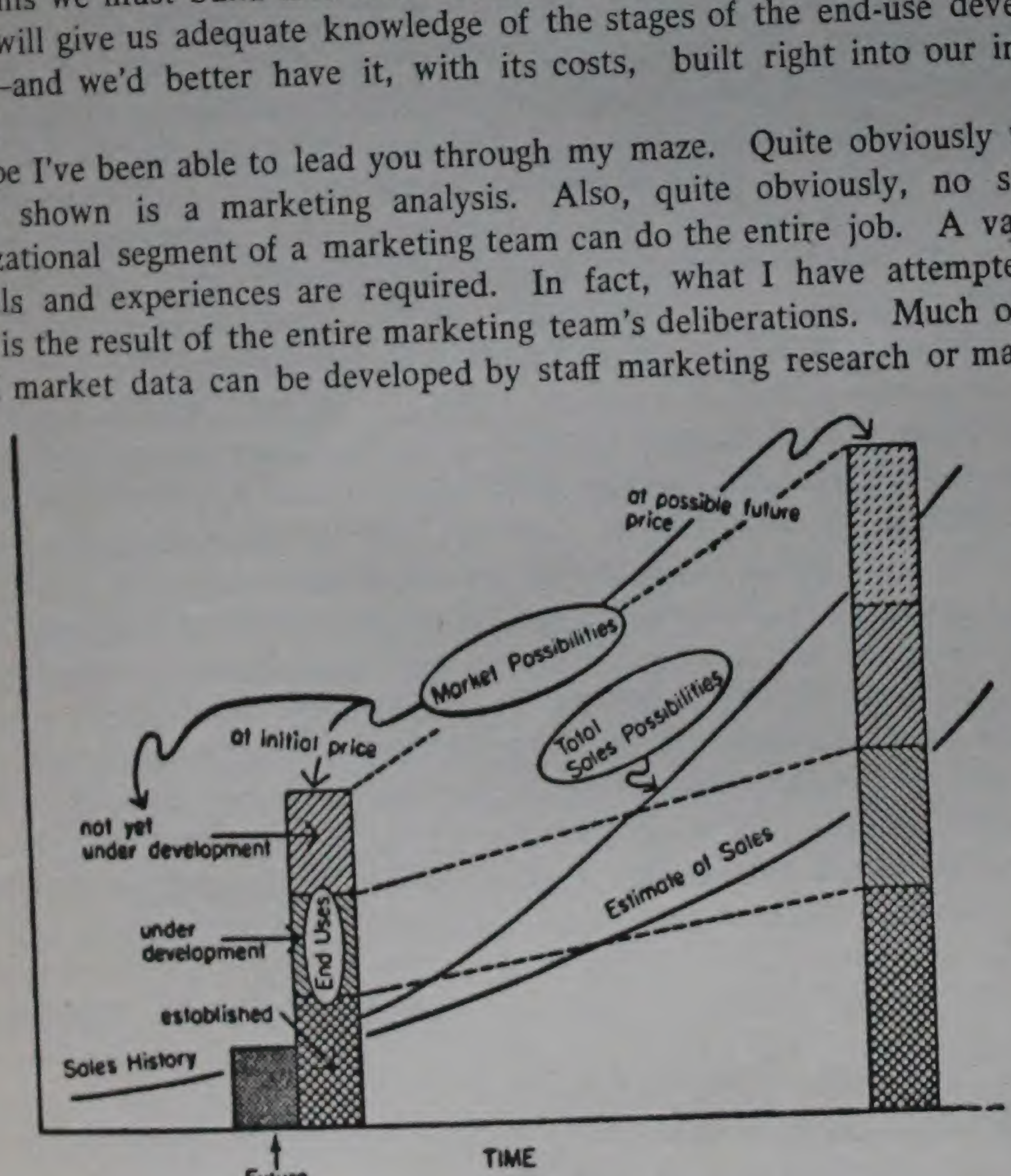


Figure 13
Position in event commercialization undertaken

ing analysis teams, but ultimately it takes the operating marketing people to say just how they will do it and what it will cost, and this is as it should be. They will be responsible for achieving the result and, accordingly, in my opinion, should say what they expect to achieve. The design of the marketing program for a new plastic product must certainly be a team effort.

25/*Marketing Mix Decisions for New Products*

PHILIP KOTLER

Estimates of the profit potential for a new product will be affected greatly by the marketing mix thought to be most desirable. In this article the author shows how the best marketing mix can be determined even when only limited information is available.

Companies are increasingly recognizing that new products are basic to their survival and growth. According to one study "it is now commonplace for major companies to have 50% or more of current sales in products new in the past ten years." [1]

At the same time, the development of new products is a costly and risky business undertaking. Some new product ideas turn out to be technically unfeasible after good money has been spent and others turn out to be commercially unsuccessful after still more good money is gone. As many as three out of four new products introduced on the market may fail to attain commercial success.

Thus management finds itself in a dilemma: it must develop new products and yet the odds weigh heavily against their success. The answer lies in making the innovation function a more rational process through administrative reforms and improved decision-making procedures. Management is coming to recognize the desirability of centralizing responsibility for overseeing the process in new product committees and departments. Furthermore, it is recognizing the need for better theory and decision procedures at each stage of the new product development process *(search, screening, profit analysis, product development, test marketing,* and *commercialization).* At each stage, a basic decision is called for on whether to abandon the project or continue it. The purpose of this paper is to describe a methodology for improved decision-making at the third stage, that of profit analysis.

THE PROFIT ANALYSIS STAGE

Suppose a new product idea has been screened and found to be compatible with the company's objectives and resources. The next task is to evaluate the profit potential of the product. In practice, this evaluation tends to be

SOURCE: From *Journal of Marketing Research,* vol. 1, February, 1964, pp. 43-49. Philip Kotler: Assistant Professor of Marketing, Northwestern University.

conducted in the following manner. On the basis of inspiration or previous research, management develops a particular conception of product attributes and a marketing program for the new product. Based on this specific conception of the marketing mix, management develops two different estimates. One is an estimate of the required sales volume to break even. The other is an estimate of the sales volume which is likely to be stimulated by the marketing mix. If the sales potential estimate comfortably exceeds the break-even volume estimate, the product idea is judged to be profitable. If profits promise to be large in relation to the required investment, the product idea is likely to pass to the fourth stage, that of product development.

Yet a more refined model for the analysis of new product profit potential is both desirable and practical. Instead of considering only one marketing mix and whether break-even volume is likely to be achieved under it, the more refined model provides for a simultaneous evaluation of the profit potential of several marketing mixes. The refined model can be illustrated by the following example:

The ABC Electronics Company is a small manufacturer of transistors and clock radios and is presently engaged in reviewing other electronic products for possible addition to the product-line. One of these is a small portable tape recorder. Small novelty tape recorders have appeared recently on the market, and they retail at prices between $20-$50. The company's marketing research department has surveyed the market and found that interest in this type of unit is substantial and growing.

An executive committee is appointed to examine the potential profitability of this product. The production department estimates that $60,000 would have to be invested in specific new equipment and facilities and that this investment would have an estimated life of five years. The accounting department submits that the product would have to absorb $26,000 a year of general overhead to cover the value of supporting facilities, rent, taxes, executive salaries, cost of capital, etc. The marketing department advises that the product be supported initially with an advertising budget of approximately $20,000 and a personal selling budget of approximately $30,000 and furthermore that it should be priced at approximately $18 F.O.B. factory with no quantity discounts. Finally, the various operating departments estimate that the new product would involve a direct material and labor cost of $10 a unit.

In the light of these estimates, should the ABC Electronics Company develop this new product? Is the marketing mix proposed by the marketing department sound?

What Is the Break-Even Volume ?

The first step in the business analysis of a new product idea is to estimate how many units would have to be sold in order to cover costs. This break-

even volume is found by analysing how total revenue and total cost vary at different sales volumes.

Total revenue at any particular sales volume is that volume times the unit price adjusted by allowances for early payment, quantity purchases, and freight. The adjustments are fairly straightforward and total revenue as a function of sales volume is generally simple to estimate.

The total cost function is more difficult to estimate. Total costs often bear a non-linear relationship to output. It is difficult enough to establish the shape of the total cost function for existing products because the statistical data are impure; the total cost function for a new product is even more difficult to estimate because the statistical data are non-existent. But as a practical matter, the break-even analyst usually assumes a linear total cost function. This assumption may be faulty for very low and very high levels of output but may be sufficiently accurate for intermediate levels, according to some recent statistical cost studies [3].

The total cost function is composed of variable and fixed cost elements. In the example, variable costs are assumed to be constant at $10 a unit. The following fixed costs are found in the example. The tape recorder requires additional fixed investment of $60,000 with an estimated life of five years. On a straight line basis, this amounts to an annual depreciation cost of $12,000. The new product is also charged $26,000 a year for its share of general overhead. This figure presumably represents a long-run estimate of the opportunity value of the corporate resources required to support this new product. In addition, the company is considering an annual expenditure of $20,000 on advertising and $30,000 on personal selling. Fixed costs, therefore, add up to $88,000 ($12,000 + $26,000 + $20,000 + $30,000).

The break-even volume can now be estimated. At the break-even volume (Q_B), total revenue (TR) equals total cost (TC). But total revenue is price (P) times the break-even volume and total cost is fixed cost (F) plus the product of unit variable cost (V) and break-even volume. In symbols:

$$TR = TC$$
$$P \cdot Q_B = F + V \cdot Q_B$$

Combining similar terms, and solving for Q_B, we find that

$$Q_B = \frac{F}{P - V}$$

$P - V$ is the difference between price and unit variable cost and is called the unit contribution to fixed cost. It is $8 in the example. The company would have to sell 11,000 units ($88,000 ÷ $8) to cover fixed costs.

At this point it would be useful to express the break-even (Q_B) not as a constant but rather as a function of the elements in the marketing mix. The break-even volume will vary with the product price and the amount of marketing effort devoted to the new product:

$$Q_B = \frac{\$12{,}000 + \$26{,}000 + A + S}{P - \$10} = \frac{\$38{,}000 + A + S}{P - \$10}$$

where A = advertising budget
S = sales budget
P = unit selling price to wholesaler

In Table 1, eight alternative marketing programs are

TABLE 1

Minimum Volume Requirements as a Function of Marketing Mix

	Some possible marketing mixes			*Break-even volume* Q_B
	Price	*Advertising*	*Sales budget*	
1.	$16	$10,000	$10,000	9,667
2.	16	10,000	50,000	16,333
3.	16	50,000	10,000	16,333
4.	16	50,000	50,000	23,000
5.	24	10,000	10,000	4,143
6.	24	10,000	50,000	7,000
7.	24	50,000	10,000	7,000
8.	24	50,000	50,000	9,857

listed for this product along with the implied break-cven volumes. In the case of mix # 5, the company could sell as few as 4,143 tape recorders to break-even; while in the case of mix # 4, the company would have to sell as many as 23,000. This high sensitivity of the break-even volume to the marketing mix decision is often overlooked in profit analysis.

The eight marketing mixes in Table 1 are a small sample from the very large number of mixes which could be used to market the new tape recorder. They were formed by assuming a high and low level for each of the marketing variables and elaborating all the combinations. Suppose executive opinion held that $16 is a price on the low side while $24 is a price on the high side; and that $10,000 is a low budget for advertising and personal selling respectively, and $50,000 is a high budget. This yields eight strategy combinations ($2.2.2 = 2^3$) and makes the marketing mix problem manageable.

Each mix is a polar case. For example, mix #1 represents the common strategy of setting a low price and spending very little for promotion. This works well when the market is highly price conscious, possesses good information about available brands, and is not easily swayed by psychological appeals. Mix # 4 represents a strategy of low price and heavy promotion. The interesting thing about this mix is that it produces a high sales volume but also requires a high sales volume to break-even. Mix # 5 consists of a high price and low promotion and is used typically in a seller's market where the firm wants to maximize short-run profits. Mix #8 consists of a high price supported by high promotion; this strategy is often used in a market where buyers are sensitive to psychological appeals and to quality. The other mixes (# 2, 3, 6, 7) are variations on the same themes, with the additional

feature that different assessments are made of the comparative effectiveness of advertising and personal selling. But it should be noted that while the division of a given budget between advertising and personal selling affects the actual sales volume, it does not affect the break-even volume.

Different marketing mixes not only imply different break-even volumes, but also differences in the sensitivity of profits to *deviations* from the break-even volume. For example, the break-even volume is approximately the same for mixes #1 and #8. Yet the high price, high promotion character of #8 promises greater losses or greater profits for deviations from the break-even volume. This is because there are higher fixed costs under mix 8 but once they are covered, additional volume is very profitable because of the high price.

Break-even analysis is necessary, but not sufficient by itself to identify the optimal marketing mix. It indicates what volumes have to be achieved but does not indicate what volumes are likely to be achieved. Missing is an account of how various elements in the marketing mix will affect the actual volume of sales.

Ideally the company requires a demand equation showing sales volume as a function of price, advertising, personal selling, and other important marketing mix elements. Such equations are difficult enough to derive for established products where there are historical data, let alone for new product ideas where there are none. Yet though the product is only an idea at this stage, there are some research procedures which can yield useful information for estimating sales. A survey could be made of the attitudes and interests of various consumers toward alternative product features and prices. It might help to develop some prototypes of the tape recorder in order to get firsthand reactions. The survey may indicate what socio-economic groups constitute major prospects for this product. The approximate number of persons in each prospect group can be estimated from census data. In addition, an analysis can be made of the relative strength of competitors in different segments of the market. Since information is expensive to collect, a Bayesian analysis of the value of specified types of additional information should be performed at each juncture [2].

Through this type of research and analysis, the executives will have a better idea of what sales volumes are likely to be achieved with different marketing mixes. For each particular mix, the executives can develop a subjective probability distribution of possible sales volumes. The mean of this probability distribution shows the expected sales volume for this marketing mix. Let the expected sales volume be denoted by Q. The fourth column in Table 2 shows an (hypothetical) expected sales volume for each of the eight marketing mixes. It should be noted that sales are expected to move inversely with price and directly with the amounts spent on advertising and personal selling. However, increased promotion is expected to increase sales at a diminishing rate.

What Is the Best Marketing Mix and the Implied Profit Level ?

At this point, the expected volume (Q) and the break-even volume (Q_B) can be compared for each mix. The results are shown in column 6 of Table 2. The greatest extra volume ($Q - Q_B$) is achieved with mix #1. But extra volume is not a sufficient indicator of the best mix. The extra volume must be multiplied by the unit value ($P - V$). A high price mix delivering a small extra volume may be superior to a low price mix delivering a large extra volume. Therefore $Z = (P - V) \cdot (Q - Q_B)$ has to be calculated for each marketing mix. These results are shown in column 7 of Table 2.

Z is a measure of the absolute profits expected from different marketing mixes. Of the mixes shown in Table 2, mix # 5 appears to promise the largest amount of profit. This mix calls for the product to be sold at a high price with little promotional support. This strategy is often used when a company believes its product has been smartly designed and essentially sells itself. But before ABC Electronics can be sure that it has found the best marketing mix, or that the product should be produced at all, it must examine some additional issues.

1. *The profit estimates for the eight marketing mixes may not be equally reliable.* The profit estimates were derived from prior cost and sales estimates. Management may have a varying amount of confidence in these different estimates. Suppose management has much more confidence in its sales estimate for marketing mix # 6 than # 5. This greater confidence may arise because the executives have more experience in using strategy 6. The choice they face is between a highly uncertain profit expectation of $18,998 and a more certain profit expectation of $16,800. Most managements have a risk aversion and are willing to accept a strategy with a lower expected profit if the accompanying risk is sufficiently less. However, the specific amount of trade-off of expected profits for risk reduction will vary among managements.

TABLE 2

A Comparison of Expected Volume (Q) and Break-Even Volume (Q_B) For Various Marketing Mixes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Marketing Mix					Volume above Break-even	Absolute Profits
	P	A	S	Q	Q_B	$Q - Q_B$	$Z = (P - V)(Q - Q_B)$
1.	$16	$10,000	$10,000	12,400	9,667	2,733	$16,398
2.	16	10,000	50,000	18,500	16,333	2,167	13,002
3.	16	50,000	10,000	15,100	16,333	−1,233	−7,398
4.	16	50,000	50,000	22,600	23,000	−400	−2,400
5.	24	10,000	10,000	5,500	4,143	1,357	18,998
6.	24	10,000	50,000	8,200	7,000	1,200	16,800
7.	24	50,000	10,000	6,700	7,000	−300	−4,200
8.	24	50,000	50,000	10,000	9,857	143	2,002

How can management's taste for risk be measured and introduced into the formal analysis? There are at least two different ways to accomplish this. One is through the preparation of an indifference map in which management expresses its preferences between different combinations of expected profit and risk. Let us recall that in considering each marketing mix, management developed a subjective probability distribution of possible sales outcomes. Only the mean, Q, of the distribution was used. Now assume that the standard deviation of this distribution is used as a measure of risk. A low standard deviation means that management is fairly sure of the sales outcome and a high standard deviation means that management is very unsure. The standard deviation of the profit estimate can be calculated from the standard deviation of the sales estimate[1]. Let us use σ_z to denote the standard devia-

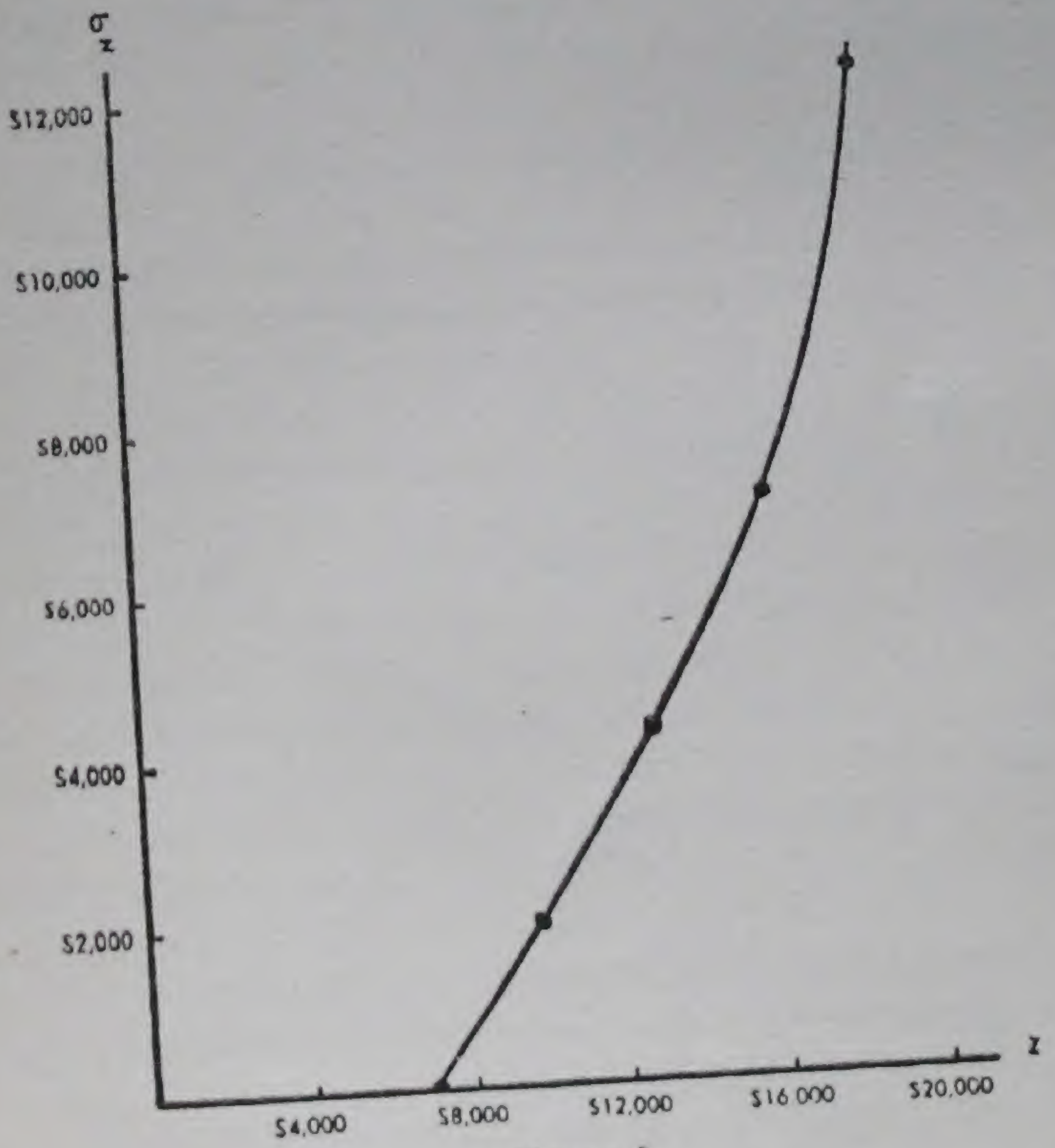


Figure 1
Company indifference curve
for expected profit (Z) and risk (σ_z)

[1]Expected profit is given by $Z=(P-V)(Q-Q_B)$ Suppose both Q and Q_B are estimated with some uncertainty. The uncertainty of Q reflects the difficulty of estimating sales; and the uncertainty of Q_B the break-even volume, reflects the difficulty of estimating costs. Suppose further that the degree of uncertainty in estimating sales is independent of the degree of uncertainty in estimating costs. Let σ_q and σ_{q_B}, the

tion of estimated profit. Let (Z, σ_z)* represent the expected profit and standard deviation of profit, respectively, of the marketing mix with the highest Z; in our example, this is mix # 5 and assume it is ($18,998, $12,000). Then management can be asked to list other (Z, σ) such that it is indifferent between them and (Z, σ)*. For example, management may be indifferent to ($18,998, $12,000), ($16,000, $6,800), ($13,000, $4,200), ($10,000 $2,000), and ($7,000, $0). An indifference curve has been fitted through these sample points in Figure 1. The region to the left of this curve consists of inferior profit situations while the region to the right of this curve consists of superior profit situations. Then the (Z, σ_z) for the other marketing mixes can be plotted. If these points all plot in the inferior region, then mix # 5 remains the best mix, subject to further qualifications. If any points plot in the superior region, the foregoing procedure can be repeated to establish a new indifference curve to the right of the old one and the remaining contending points can be tested again.

If management has difficulty in thinking of risk in terms of standard deviations, an alternative procedure can be used instead. Management can be asked to express its preferences between various gambles where the risks are stated. The preferences become the basis for preparing a corporate utility scale for various money sums. For a management with risk aversion, the chance to earn twice the profit tends to carry *less* than twice the utility. For each marketing mix, the possible profit outcomes are re-stated as utility outcomes. Then the probabilities are used to find the expected utility for that marketing mix. The best marketing mix can be defined as the one with the maximum expected utility [5].

2. *The absolute profit estimates for the eight marketing mixes must be converted into rates of return on investment in order to choose the best marketing mix and to decide whether to develop the new product at all.* For example, management estimates that 5,500 units will be sold in the first year with marketing mix # 5 and 8,200 units will be sold with marketing mix # 6. But mix # 6 will tie up more dollars than mix # 5 because production, inventory and marketing are carried out on a larger scale. For each mix Z should be expressed as a ratio to the required investment. Mix # 5 is still likely to stand out as the best choice in the example. But now a second question also can be answered: is the expected rate of return greater than the company's target rate of return? The company is not likely to develop a new product whose expected rate of return falls short of the target rate.

3. *The use of expected profits ignores the variability and duration of profits implied by different initial marketing mixes.* At the outset, it should be

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standard deviations, represent the respective degrees of uncertainty. Then σ_z, the standard deviation of profit, can be derived by applying elementary theorems on variances. Specifically, $\sigma^2_{ax} = a^2\sigma^2_x$ and $\sigma^2_{x+y} = \sigma^2_x + \sigma^2_y$. Applying these theorems to $Z = (P - V)(Q - Q_B)$, $\sigma_B = (P - V)\sqrt{\sigma^2_q + \sigma^2_{q_B}}$

emphasized that management is *not* trying to determine a permanent marketing mix to be used over the lifetime of this product. Both costs and sales will change over time because of competition, market saturation, business fluctuations, and the like. The company may start with mix # 5 and if strong competition enters the market with a reduced price, the ABC Electronics Company may find it expedient to change its mix. It may reduce its price and/or change its promotion. Either reaction is tantamount to adopting a new marketing mix.

By examining different marketing mixes in the profit analysis stage of new product development, the company is trying to ascertain an initial strategy and its implied initial profit level. Thus $18,998 represents the amount of profits expected in the first year with mix # 5. The company is interested in discovering the strategy which will enable it to recover as much cost as possible as soon as possible because of the difficulty of foretelling the fate of the product beyond a few years. Yet it is also a fact that the initial marketing mix can have an important effect on the company's long-run success with this product. A low price medium promotion mix like # 2 in creating a high initial sales volume, tends to bring about an earlier saturation of the market and hence a shorter period of profits. Mix # 5, because it employs a high price and brings high profits, is likely to induce an early influx of competition which also tends to shorten the period of good profits. The long-run implications of the initial mixes must be considered. The solution ultimately may lie in simulating on a computer different time sequences of mix decisions under alternative assumptions and events to derive some indication of alternative profit-possibilities.

4. *The previous analysis assumes that no marketing mix has been overlooked which might yield a higher expected profit than the eight listed mixes.* The sales estimates (Q) in Table 2 can be viewed as a sample from a larger universe of executive opinion concerning the functional relationship $Q = f(P, A, S)$. It may be possible to find an equation which closely describes these estimates. The equation could then be solved to estimate expected sales, and ultimately profits, for marketing mixes which were not explicitly considered by the executives. For example, a plausible mathematical form for demand functions is the multiple exponential:

$$Q = kP^a A^b S^c$$

where k = a scale factor
a = the price elasticity
b = the advertising elasticity
c = the personal selling elasticity

The multiple exponential equation has provided a useful fit in several demand situations [4]. This form fits quite well the sample values of (Q) in Table 2. This is more by design than by accident. The least squares equation is

$$Q = 100{,}000\, P^{-2} A^{1/8} S^{1/4}$$

Price has an elasticity of — 2, that is, a one per cent reduction in price, other things equal, tends to increase unit sales by 2 per cent. Advertising has an elasticity of 1/8 and the sales budget has an elasticity of 1/4. The coefficient 100,000 is a scale factor which translates the dollar magnitudes into the appropriate physical volume effects.

Several of the preceding equations can now be drawn together:

$$Z = (P-10)(Q-Q_B) \qquad \text{(1) profit equation}$$

$$Q = 100{,}000\, P^{-2} A^{1/8} S^{1/4} \qquad \text{(2) demand equation}$$

$$Q_B = \frac{38{,}000 + A + S}{P-10} \qquad \text{(3) break-even volume equation}$$

The best marketing mix was defined initially as the one which maximized Z, that is, profits. Solving equation (1) in terms of (2) and (3), Z can be rewritten as:

$$Z = (P-10)\left(100{,}000\, P^{-2} A^{1/8} S^{1/4} - \frac{38{,}000 + A + S}{P-10}\right)$$

$$Z = (P-10)(100{,}000\, P^{-2} A^{1/8} S^{1/4}) - 38{,}000 - A - S$$

$$Z = 100{,}000\, P^{-1} A^{1/8} S^{1/4} - 1{,}000{,}000\, P^{-2} A^{1/8} S^{1/4} - 38{,}000 - A - S \qquad (4)$$

Thus Z is a function of three marketing variables.

The next step is to find that unique set of values of P, A, and S which maximizes Z in (4). This is a problem in differential calculus. The work is carried out in the appendix where the following values emerge:

$$P = \$20$$
$$A = \$12{,}947$$
$$S = \$25{,}894$$
$$Z = \$26{,}735$$

It is interesting to compare this mix with mix # 5 which yielded the highest Z of the eight mixes considered in Table 2. Mix # 5 called for a price of $24 and an advertising and sales budget of $10,000 each. The new calculation calls attention to the possibility that a somewhat lower price, a slight increase in advertising expenditure, and a substantial increase in personal selling expenditure might boost profits by several thousand dollars. Thus it may be possible to employ mathematical analysis to overcome the limitations of considering only a small set of marketing mixes. Though we have illustrated this in terms of Z, a more complicated mathematical analysis can be prepared for finding the best marketing mix under conditions of uncertainty, different investment requirements, and more than three marketing variables.[2]

[2] It possesses a number of plausible properties. First, it provides that the effect of a specific marketing variable depends not only upon its own level but also on the levels

SUMMARY AND CONCLUSIONS

The overall challenge of new product development is to weed out the impracticable ideas as early as possible and to process the remaining ideas as efficiently as possible. The profit analysis stage is where a product idea which has been found to be compatible with the company's objectives and resources must be analysed for its profit potential. It is not sufficient to confine the analysis to one specific conception of how the product will look and be marketed, though this is the typical practice. For the marketing mix will influence both the costs and the sales of the new product, and it is not obvious in advance which mix will maximize expected profits.

The method outlined in this article requires management to develop estimates of likely costs and sales under different marketing mixes on the basis of the best available information. These estimates become the raw data in an analysis which seeks to determine the best marketing mix and whether this mix promises a sufficient level of profits, in the face of uncertainty and the required investment, to justify developing the product. Admittedly there is no way to prove that the suggested analysis does in fact lead to better decisions at the profit analysis stage. Its claim is that it calls attention to the relevant factors and outlines a systematic way to consider them.

APPENDIX

The objective is to find the unique set of values of price (P), advertising (A), and personal selling (S), which maximize profits (Z) in the equation :

$$Z = 100{,}000P^{-1}A^{1/8}S^{1/4} - 1{,}000{,}000P^{-2}A^{1/8}S^{1/4} - 38{,}000 - A - S \qquad (1)$$

First find the first three partial derivatives of Z and set them equal to zero :

$$\frac{\delta Z}{\delta P} = -100{,}000P^{-2}A^{1/8}S^{1/4} + 2{,}000{,}000P^{-3}A^{1/8}S^{1/4} = 0 \qquad (2)$$

$$\frac{\delta Z}{\delta A} = 12{,}500P^{-1}A^{-7/8}S^{1/4} - 125{,}000P^{-2}A^{-7/8}S^{1/4} - 1 = 0 \qquad (3)$$

$$\frac{\delta Z}{\delta S} = 25{,}000P^{-1}A^{1/8}S^{-8/4} - 250{,}000P^{-2}A^{1/8}S^{-8/4} - 1 = 0 \qquad (4)$$

Rearrange the terms in (2):

$$\frac{\delta Z}{\delta P} = 100{,}000P^{-2}A^{1/8}S^{1/4}\,(20P^{-1} - 1) = 0 \qquad (2a)$$

Assuming that $P \neq \infty$, $A \neq 0$, and $S \neq 0$, it follows that $(20P^{-1} - 1) = 0$ or

$$P = \$20 \qquad (5)$$

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of the other marketing variables. Thus a price of $16 will have one demand effect if advertising and selling are each set at $10,000 and another if advertising and selling are each set at $50,000. This interdependency does not exist with linear equations. Second, the exponential equation shows diminishing marginal returns to increases in the advertising and sales budgets and this accords with intuitive expectations. Finally, the exponents represent the respective elasticities of the marketing variables, provided there is no intercorrelation between the independent variables.

Next, rewrite (3) and (4):

$$12{,}500P^{-1}A^{-7/8}S^{1/4}(1-10P^{-1})=1 \quad (3a)$$

$$25{,}000P^{-1}A^{1/8}S^{-3/4}(1-10P^{-1})=1 \quad (4a)$$

Divide (3a) by (4a), term for term:

$$1/2\,A^{-1}S = 1$$

$$S = 2A \quad (6)$$

Next substitute (5) and (6) in (3a):

$$12{,}500(20^{-1})(A^{-7/8})(2A)^{\frac{1}{4}}[(1-10(20^{-1})]=1 \quad A = \$12{,}947 \quad (7)$$

Substitute (7) in (6):

$$S=2(12{,}947) = \$25{,}894 \quad (8)$$

The optimal marketing mix (P, A, S) is ($20, $12,947, $25,894). The executives would forecast that this mix would produce a sales volume of:

$$Q = 100{,}000-^{2}A^{1/8}S^{1/4}$$
$$= 100{,}000(20^{-2})(12{,}947^{1/8})(25{,}894^{1/4})$$
$$= 10{,}358$$

The break-even volume implied by this mix would be:

$$Q_B = \frac{38{,}000+A+S}{P-10}$$
$$= \frac{38{,}000+12{,}947+25{,}897}{20-10}$$
$$= 7{,}684$$

Finally, profits (Z) under the optimal mix would be:

$$Z = (P-V)(Q-Q_B)$$
$$= (20-10)\ (10{,}358-7{,}684)$$
$$= \$26{,}735$$

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26 / *The Man in the Package*

ERNEST DICHTER

Marketing management must take an increasing interest in packaging since more than mere product protection is involved. Its role as a salesman is vital. This report defines the characteristics of a well-designed package from the consumer's point of view.

OUR VANISHING SALESMAN

Aside from the product itself, the most personal contact a manufacturer has with his customers today is the package that contains his product.

This means that the package has a difficult job to do. It must replace the living, breathing salesman as a vital link between the manufacturer and consumer.

More and more, the trend in selling goods is toward self-service. Not only is this true in supermarkets, but also in five-and-dime emporiums, clothing establishments with pipe racks, and an ever-growing variety of stores and shops. The salesman simply isn't there any more. And as we get further and further into the era of the Vanishing Salesman, the role of the package *as a salesman* becomes more prominent and more urgent.

Many packaging designers and manufacturers are already aware of the personal character of the package-consumer relationship. At a recent seminar held by the Paraffined Carton Research Council, it was evident that designers and makers of packages are no longer content to view the successful package as one that mainly gives them a feeling of pride about their contributions to the finished article. The successful package was not seen merely as one with an intriguing shape or design, but as one whose overall design, shape, color, and printed message delivered an impact that resulted in a personal relationship between the consumer and the package on the shelf.

Today the package must come alive at the point of purchase. The salesman may no longer be visible behind the counter, supplying a necessary living element in the selling process. But he is present, just the same.

He has stepped inside the package.

Formerly, a manufacturer had little control over the salesmen who represented his product in retail stores. They were jolly or grumpy, inept

SOURCE : Seventeen-page booklet published and copyrighted 1957 by the Paraffined Carton Research Council. Ernest Dichter : President, Institute for Motivational Research, Inc., Croton-on-Hudson, New York.

or skillful, pleasant or not, courteous or not—depending on the weather or the season or the state of their nerves.

The salesman in the package presents no such problem. He is yours to create and control.

A poorly designed package tells the consumer that the maker of the product does not care. Like an impatient salesman at five minutes before closing time, he is saying "take it or leave it." But a well-designed package is proof that the manufacturer really cares about both the customer and the product and is willing to make an extra effort to please. He is employing a friendly, interested salesman.

Just what is a well-designed package? According to research, the consumer himself is the measure of a good package.

If you ask him, every consumer has a picture of the ideal package in his head. This is not simply a picture of how the package looks: it is a dramatic visualization of how it feels as he turns it around in his hand, of how it fits into his medicine chest or pantry, and of how easy it is to get at the product inside when he really needs it.

Through his emotional needs, the consumer sets up very demanding standards of good packaging. These may be listed as follows:

Convenience. Does the package hold enough of the product to satisfy his needs without being too bulky or too heavy?

Adaptability. How well does the package fit into his freezer, cupboard, glove compartment, or dresser drawer?

Security. Does he feel assured that you have given him quality? Does the package make him feel it?

Status or Prestige. Does he feel that by buying your package he is expressing something about himself?

Dependability. Does the package let him feel that he can rely upon you, the manufacturer?

Esthetic Satisfaction. Is he pleased and satisfied by the impact of the design, color, and shape of the package?

Actually these six criteria can be described simply as combining utility, security and esthetic appearance. This quotation from the mother of a young perfume purchaser is an example of the practical application of these criteria:

> My daughter has a perfume now that, God bless her, she can use without getting it on the floor or all over her dressing table. She used to have (name of brand) and (name of brand). One she had to shake so hard to get the perfume out that she said it gave her a charley-horse. The other one had such a big hole that whenever she used it she couldn't control it, and it spilled all over, and the whole house smelled. This new kind, now, has just the right kind of hole. And the box is so good-looking, and the bottle is so swanky. You'd think it cost twenty dollars an ounce.

Here a young girl's "dream package" fulfills all the above criteria—with special emphasis on status. The desire for status is a consumer motivation that seems to be as vitally involved in the consumer-package relationship as in the purchase of any product from premium beers to Cadillacs. Status and other factors will be examined at length later when we consider the core of all successful packaging: *how well modern packaging meets the emotional and psychological needs of today's consumer,* as expressed in his daily purchasing patterns and his conception of the ideal package.

A good package does not create the personality of a product. Like a good cosmetic on a beautiful girl, the desirable package merely expresses personality in a dramatic, easily recognizable way.

On the other hand, a bad package or design contradicts, underplays, or undermines a product's personality.

These are important considerations, since the personality of a product is an important determinant of brand loyalty. And so this is the place to ask: "Just what is product personality and how is it affected by package design?"

Two Images Of Product Personality

Product personality consists of two parts that we can only isolate on paper. One is the *physical image*, the other is the *personality image.*

Physically a bar of soap is round, square, or octagonal; but in its personality image it may appear boldly masculine or softly feminine, modern or old-hat, of high status or low, light and delicate or heavy and coarse.

Although we have separated the two images here, the consumer never does so. He sees a unified image of the product's personality. And, significant for the package designer, any negative features of either image will affect the total picture in the consumer's head.

For example, some men might reject a bar of soap that was ovoid-shaped, strongly scented, and packaged in a frilly box. Too effeminate, they would say. But they might accept the same soap if it were brick-shaped.

Other Elements of Packaging Design

Although shape of a product may affect a product's personality all alone, it often shares its influence with other important components of packaging such as color, text and illustration.

Designers and illustrators of great talent have presented consumers with cake mix packages in which the illustrated confection seemed so real, virtually dripping with sensory appeals, that the consumer could "taste" the cake when he saw the package on the supermarket shelf. Unfortunately, there are other cake mixes in which the package fails to express the true personality of the cake. Cake is a dessert that signifies abundance to most consumers (ice cream is another), but we often find the illustrated cake cramped on one side of the box, covering not more than 60 per cent of the surface.

In such a case, the best way to revive the cake's true personality is to

redesign the package, enlarging the illustration so that it "bleeds off" the box on both edges.

Design Can Correct Wrong Impression

Sometimes the consumer insists on misinterpreting a product's personality in spite of all a good designer can do.

When this happens, the goal of the packager must be to "change" the product's personality and thus alter the consumer's impression of it.

Tea used to be advertised in a way that reinforced the public's mistaken impression that it was a "weak sister" beverage suitable for sick people and kindly old ladies. Research showed that both the packaging and advertising copy needed to be converted to the masculine gender. This called for stressing the he-man quality of tea, and the use of the color red was recommended—replacing the weak blue previously seen in tea advertising.

In a margarine study, favorable consumer response occurred when the name of the brand was printed against the background of a green leaf while the margarine was represented as the disk of a daisy. This evoked an impression of naturalness, a desirable personality trait for margarine. But consumers formed a mistaken impression of another brand, which showed three pats of margarine encased in a cube of ice. They associated the ice cube with a test tube; the symbol evoked fear (of harmful chemicals) and led to rejection of the product.

Some designs can even prejudice the consumer against the quality of a product. Here is an instance of a Midwestern housewife's response to a margarine package:

> From the point of view of design, I like the (Brand X) box. (Brand Y) is too cluttered, too much to look at. It has more information and is easier to read but only if you're interested. But knowing oleo as I do, I would not stop to read and that's why I'd pick up (Brand X) because the quality seems to be better revealed in the package.

Here the consumer is providing a most direct guide to the designer. Such reactions are the rule rather than the exception, for margarine is a product about which the housewife feels she knows all there is to know.

Unified Trade Symbol Important

The aims of the most effectively designed package can be defeated if a unified trade symbol is lacking.

In a study of the advertising and promotion problems of a large paper products company, it was found that the use of different trade symbols, including different brand-name designs, for the premium-priced napkins and the lowest-priced napkins made the consumer associate the entire product in all price ranges with the more generally known trade symbol which appeared

on the *cheap napkins.* The suggestion of "cheap napkin" was carried over to even the highest priced product. Much of this confusion of product personality was due to the fact that the packaging of the premium item, besides lacking a unified quality trade symbol, did not provide a recognizable *quality differential*—either in color, text, typography, or brand-name design.

Changing a Product's Personality

People like to say they never judge a book by its cover. *But they do.*

In one study, coffee was served from different coffee makers including the most modern dripolators and the most antique coffee urns. Most of the drinkers said that the coffee poured from the antique urns tasted better. Actually it was the same coffee. This confirmed the fact that modern consumers believe that somehow things were better in the past—more wholesome, purer, etc. But more important, it indicated that the size, style and shape of the coffee container influenced the drinker's impression of the taste.

This ability of a package or container to modify the personality of a product was further shown in a study for a pharmaceutical company. The so-called potency rating of two different-sized pills was tested. Although the potency of the drug "packaged" in the larger pill was less than that in the smaller one, not only layman but also many doctors were fooled. The medical men insisted that the larger pill was the more potent !

Enhancing Status Through Packaging

Size is not always the important factor. Sometimes a new and more tasteful design, high in status value, can alter a product's personality and give it a prestige it never had before. Whiskey decanters designed by artists like Russel Wright and Walter Landor have given a new prestige to some of the cheaper whiskeys. These containers have turned up in the liquor cabinets of persons accustomed to serving only the higher priced whiskeys.

But this kind of "counterfeiting" involves risks that should be taken into account by packaging designers and manufacturers.

One investigation revealed that while, in many cases, the new decanters added prestige to the product, in a significant number of instances the consumer felt that expensive decanters forced manufacturers to "make up the difference" by using cheaper ingredients in the liquor.

However, the positive effects on sales produced by these new decanters should be seriously studied in any consideration of the sales potential that lies in the changing or enhancing of a product's personality.

The proof of the package comes the moment the consumer walks down the aisle of the supermarket. Either the package reaches out to him in a persuasive way, or it lies dead while its nearest and best competitor is chosen for the shopper's basket.

The consumer arrives in the supermarket lost in a fog of competitive claims that have been drummed into his head by newspapers, magazines,

radio, TV, and billboards. The similarity of these advertising appeals often arrests the development of a distinctive product personality; this fact is responsible for the widespread lack of brand loyalty among supermarket customers today.

It is up to the package designer, to a large extent, to attract the consumer to the particular product on the shelf. But first he must consider what has happened to the consumer's shopping experience.

The "New Angle" of Consumer Vision

Today's consumer doesn't see the product on the shelf the way he did ten or fifteen years ago. In the past the product was directly in the line of his vision, straight across the grocer's counter. When he viewed the product in the package, his eyes met it head-on and he could take in all the essentials at a glance. The package presented a clear-cut panel, with its brand name, colors, text, and shape easily visible.

But in today's supermarket, passing among palisades of parallel shelves filled with hundreds of products, the consumer sees mainly a gigantic blur of boxes and cans in which there are no outstanding elements. In this chaos a package must have prominent features of design that catch the eye, hold the attention, and initiate the dramatic interplay between package and patron that makes the package come alive in the customer's hand.

The problem is more complicated than it used to be because the strolling supermarket customer seldom sees many of the packages head-on as he did in the small grocery store. Nowadays his eyes meet the shelf at an angle and he cannot perceive a clear-cut front package panel. One edge of the box and part of one side intrude on the area of vision, breaking and weakening the impact.

In examining the packaging problems arising from this "new angle" of vision, designers and manufacturers might also take into account the phenomenon of *peripheral vision.* Here, in addition to new angles of perception there is also present the factor of diminished visibility. In peripheral vision, certain colors and designs are barely perceptible. Certain forms and shapes, effective when seen directly by the consumer, become distorted, confused, and weak in impact in the dim light and abnormal angles of peripheral vision.

These visual phenomena suggest new areas for exploration in packaging—in design, typography, color, shape—to assure successful impact from whatever angle the product is viewed by the consumer. Obviously the problem is a complicated one, both technically and psychologically, but many of our major packaging designers are already meeting the challenge of new merchandizing techniques.

To be successful a package must accomplish the following things when it is on display:

a. It must achieve a "reaching out" quality.
b. It must provoke uninterrupted inspection by the consumer.